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# CURRENT AFFAIRS AUGUST 2018

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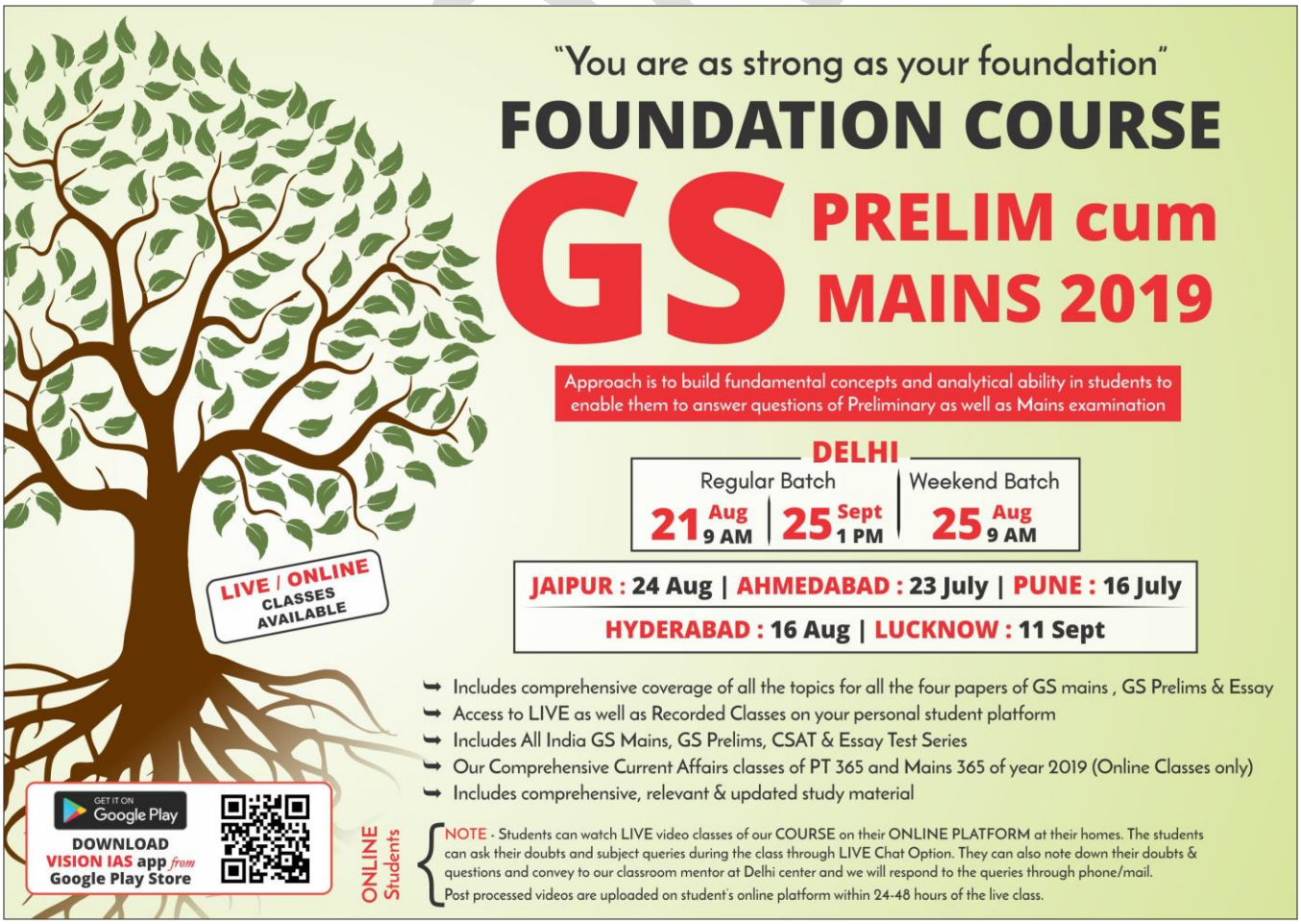


# 1. POLITY AND CONSTITUTION

## 1.1. SEDITION

**Why in news?**

Law commission of India has publicized a consultative paper for a comprehensive public discussion regarding Section 124A of the Indian Penal Code 1860, which deals with sedition.

**Understanding Sedition - Brief Introduction**

- **What is Sedition -** As per Section 124A of IPC, Sedition is an act that brings or attempts to bring into hatred or contempt, or excites or attempts to excite disaffection towards the Government established by law in India by words, either spoken or written, or by signs, or by visible representation, or otherwise. As per this Section, a person is liable to be punished with imprisonment for life or imprisonment up to three years with fine.
- **Concerns regarding Sedition –** Relevance of this Section in a democratic and independent nation is a matter of continuous debate. Use of Section 124A by the government might go beyond the reasonable restrictions provided under fundamental right to freedom of speech and expression as per Article 19 of the Constitution. There is an apprehension that this Section might be misused by government of the day to suppress political dissent, constructive criticism of government and its policies thereby stifling democratic governance.
    - The countries like UK, Australia have already abolished sedition laws considering them draconian.

**Historical Background: Colonial Relic**

- **Origin and evolution -** The legitimacy of British colonial governance system rested on silencing any kind of political dissent or dissatisfaction thus the right to freedom of speech and expression of individuals was suppressed through imposition of Section 124A. Section 124A IPC added through Special Act XVII of 1870, defined Sedition and 1898 amendment made it a punishable offense. Various leaders such as Mahatma Gandhi, Bal Gangadhar Tilak have been punished under this.
- **Post Constitutional Journey and Sedition vis-a-vis Article 19 of the Indian Constitution -** Various verdicts by Indian Judiciary have led to re-interpretation and re-examination of 'sedition' in light of *Article 19 of the Constitution* in order to strike a balance between right to free speech and expression and power of State to impose reasonable restrictions (*Article 19(2)*)**.** These verdicts have led to narrowing the ambit of 'Sedition' making its meaning more explicit, precise and unambiguous.
- **Essential ingredients for a seditious act -** Various verdicts in Romesh Thappar case, Kedar Nath Singh case, Kanahiya Kumar case re-defined a seditious act only if it had essential ingredients as:
    - Disruption of public order
    - Attempt to violently overthrow a lawful government
    - Threatening the security of State or of public.
- **Judicial verdicts in defense of Right to freedom of speech and expression -** The judicial pronouncements in cases like AK Gopalan vs State of Madras, Ramesh Singh vs Union of India, Shreya Singhal vs State elaborated 'what does not tantamount to sedition':
    - Political dissent
    - A thought non-consonant with the government and its policies
    - Expression of frustration over the state of affairs e.g. racist state or gender biased state
    - Expressing different or conflicting ideas of Indian nation
    - Right to offend
    - Peaceful protest

**Sedition vis-a-vis other Statutes**

- Several sections of IPC deal with offenses against State as well as against public tranquility. Another act named Unlawful Activities Prevention Act 1971 has been enacted to prevent terrorist activities.
- Since sedition is an offense against the State, higher standards of proof must be applied to convict a person for this offense. It must be invoked for *gravest of offenses against State*. If the same doesn't fall within the ambit of seditious act, it might attract provisions of some other laws/statutes as mentioned above.

**Way Forward**

- Dissent acts as a safety valve in a vibrant democracy and every restriction on free speech and liberty must be carefully imposed weighing its reasonableness.
- If the country is not open to positive criticism, there lies little difference between the pre- and post-independence eras
- Debates and discussion with respect to essential questions like need of sedition law in a modern democratic society vis-vis freedom of speech, redefining sedition etc. needs to be started among the legal luminaries, lawmakers, Government, NGOs, academia, students and above all, the general public.

## 1.2. PUNJAB'S SACRILEGE LAW

**Why in news?**

Punjab cabinet has proposed to amend Section 295A of Indian Penal Code.

**Provisions of the amendment**

- It will introduce a new section 295AA in IPC.
- It proposes life imprisonment for whosoever cause injury, damage or sacrilege to four religious texts, that is the Guru Grant Sahib, the Quran, the Bhagwat Geeta and the Bible.
- Aims to promote social harmony and public order.

**Criticism**

- Punishment of life imprisonment is disproportionate. Further, already Section 295A of IPC exists which criminalizes 'deliberate and malicious acts intended to outrage religious feelings'. Under it, the scope of punishment is 3 years with or without fine.
- Sacrilege is vague which makes the law too vast and liable for misuse.
- Curbs freedom of speech. Also, there is a fear that we are increasingly becoming a society governed by criminal law taking away substance of our fundamental rights.
- The article defiles the sacredness of the Book because the status of the Book now becomes an artefact of state power. In other words, rather than being luminous, potent and transcendent texts, their status is now reduced to a section of the Indian Penal Code.
- Punjab's sacrilege legislation is akin to Pakistan's blasphemy laws, which have led to the ascendance of theocracy and religious violence in Pakistan. State interfering in the religious matters is inconsistent with idea of secular India.

**Way forward**

Supreme Court has upheld the Constitutional validity of section 295A in 1957 as an instrument to punish aggravated insults to religion, with the intention to 'disrupt public order' which is well within the purview of reasonable restrictions provided under Article 19(2) of the Indian Constitution. Going beyond Section 295A can prove to be a double-edged sword. It needs comprehensive debate before it is amended.

## 1.3. FAMILY LAW REFORMS

**Why in News?**

Law Commission of India has released a Consultation Paper on '**Reform of Family Law'**

**Background**

- The ministry of law and justice made a reference to the Law Commission of India on June 2016 to examine matters in relation to the **Uniform civil code.**
- The aim was not to identify an identical procedure for all but **to correct the gender discriminatory nature of family laws across religions**.
- In the absence of a consensus on a uniform civil code, the best way forward for India may be to **preserve the diversity of personal laws while ensuring that they do not contradict the fundamental rights.**
- It pointed out that the **prevailing personal laws place women at a disadvantaged position.**

- The report deals with **four key issues**: marriage and divorce, custody and guardianship, adoption and maintenance, and succession and inheritance.

**What is Uniform Civil Code?**
- A Uniform Civil Code essentially means a common set of laws governing personal matters for all citizens of the country, irrespective of religion.
- Currently, different laws regulate these aspects for adherents of different religions.

**Recommendations**

- **Age of consent for marriage:** It advocates for **change in the age of consent for marriage**, opining that the current difference of 18 years for girls and 21 years of age for boys simply contributes to the stereotype that wives must be younger than their husbands.
- **Marriage and Divorce**
  - **Grounds for divorce (No-fault Divorce):** It refers to a situation where the emotional and other bonds, which are the essence of marriage, have disappeared and only a façade remains.
  - The commission suggested that where a marriage has ceased to exist both in substance and in reality, **divorce should be seen as a solution** rather than a taboo.
  - **Community of Property upon Divorce and Maintenance:** It recommends that a no-fault divorce must accompany community of self-acquired property, owing to the fact that women are usually left in a vulnerable position while allowing for immediate and unilateral divorce.
  - **Rights of Differently-Abled Persons in Marriage:** The paper recommends amendments to exclude from grounds for divorce, forms of illnesses that can be cured or controlled with adequate medical treatment or counselling.
  - **Special Marriage Act**: It calls for **modification of the 30 day notice period for registration of marriage**, in view of the misuse of the provision to discourage an inter-caste or an inter-religion marriage.
- **Custody and Guardianship**: Guardians and Wards Act, 1890 to be amended to the extent that a **husband is not regarded as the guardian of the wife**, and both the parents equally share responsibility of the child born from such wedlock
- **Adoption and Maintenance:** Juvenile Justice (Care and Protection of Children) Act, 2015 is inadequate in addressing the jurisprudential questions on adoption. It then strongly suggests the use of the term 'parents' in place of 'mother and father' in adoption, to enable individuals of all gender identities to avail of the Act.
  - It also recommends that the word 'child' should replace son and daughter so as to ensure that intersex children are not excluded from being adopted.
  - The current law does not permit a male adult to adopt a female child. It is suggested that there should be a provision of adoption to a single parent irrespective of gender and gender identity of the child as well as the parent.
- **Succession and Inheritance**.
  - It advocates for abolition of coparcenary and suggests that the right in a property by birth be extinguished by opting for 'tenancy-in-common' instead of 'joint tenancy'.
  - **Hindu Undivided Family (HUF) has also been suggested to be abolished**, noting that the institution of HUF was being used for **tax avoidance.**

## 1.4. WRONGFUL PROSECUTION

**Why in News?**

Recently, Law Commission of India (LCI) submitted its 277th report titled "**Wrongful Prosecution (Miscarriage of Justice): Legal Remedies**" to the Government.

| Percentage of under trials | Time spent in prisons |
|---|---|
| 25.1% | More than 1 year |
| 17.8% | Upto 1 year |
| 21.9% | 3 to 6 months |
| 35.2% | Upto 3 months |

**Background**

- **India has one of the highest under trial populations in the world:** According to National Crime Records Bureau's (NCRB) annual Prison Statistics India (PSI) report 2015, there were more than 4.19 lakh prisoners across India out of which 67.2% were under trials (i.e. people who have been committed to judicial custody pending investigations or trial). During 2015, more than 82,500 prisoners were released by acquittal and more than 23,400 prisoners were released in appeal.
- Undertrials spend a substantial period of time awaiting trials/judicial determinism of their case which becomes a **graver miscarriage of justice** when the person is wrongfully accused and incarcerated pending trial and proceedings which he should not have been subjected to in the first place.

- **Such situations often result in violations of fundamental rights** of the victim under Article 21 and 22 of the constitution, gross human rights violations, social stigma faced, precious years lost, mental, emotional and physical harassment, huge expenses incurred during the process and overcrowding of prisons.
- **Infringement of a fundamental right due to police and prosecutorial misconduct involves State liability**. However, there is a lack of effective response from the State to the victims of such wrongful prosecutions within the current Criminal Justice System in the country. Remedies available under the present system remain complex and uncertain, creating only an ex-gratia obligation without any statutory or legal backing for the rights of victim.
- **Article 14(6) of International Covenant on Civil and Political Rights, 1966 (ICCPR)** dealing with miscarriage of justice creates an obligation on the State parties to enact a legislation ensuring that these victims are compensated within a reasonable period of time. India ratified the ICCPR in 1968 but is yet to enact the legislation for the same.
- Delhi High Court in **Babloo Chauhan Case** had requested LCI to examine the possibility of the legislation for providing relief and rehabilitation to victims of wrongful prosecution and incarceration in India. LCI has therefore setout standards to be applied in the above cases of miscarriage of justice and has also presented a **Draft Code of Criminal Procedure (Amendment) Bill, 2018** to suitably incorporate the recommendations.

**Current provisions provide for following remedies:**
Currently three categories of court based remedies with respect to miscarriage of justice are available to a victim:

- **Public law remedy:** it is treated as a violation of fundamental rights under **Article 21** (the right to life and liberty) and **Article 22** (protection against arbitrary arrests and illegal detention, etc.) of the Constitution, that invokes the writ jurisdiction of Supreme Court and High Courts under **Article 32 and 226** respectively.
- **Private law remedy:** it exists in the form of civil suits against the state for monetary damages on account of **tortious acts** of public servants- especially negligence by a public servant in the course of employment. Both public and private law remedies are victim centric in nature.
- **Criminal law remedy:** it holds the wrong doer accountable i.e. proceedings with criminal action against the concerned officers of the State for their misconduct.

**International Covenant on Civil and Political Rights, 1966**

- It is one of the key documents dealing with the miscarriage of Justice.
- It commits its parties to respect the civil and political rights of individuals, including the right to life, freedom of religion, freedom of speech, freedom of assembly, electoral rights and rights to due process and a fair trial.
- As of August 2017, the Covenant has 172 parties and six more signatories without ratification.
- It is part of the International Bill of Human Rights, along with the International Covenant on Economic, Social and Cultural Rights (ICESCR) and the Universal Declaration of Human Rights(UDHR).
- Other important parts of the covenant are-
  - Right to Physical integrity
  - Liberty & Security of Persons
  - Procedural fairness & Right of accused
  - Individual Liberties
  - Political Rights

**Recommendations of LCI**

- **'Wrongful prosecution' to be the standards of miscarriage of justice, as against 'wrongful conviction' and 'wrongful incarceration':** 'Wrongful prosecution' would include cases where the accused and not guilty of the offence, and the police and/or the prosecution engaged in some form of misconduct in investigating and/or prosecuting the person. It would include both the cases where the person spent time in prison as well as where he did not; and cases where the accused was found not guilty by the trial court or where the accused was convicted by one or more courts but was ultimately found to be not guilty by the Higher Court.
- **Need for a transparent legislative process:** There needs to be an established legislative process, according a transparent, uniform, affordable, efficacious and timely remedy for the loss and harm inflicted on the victims on account of wrongful prosecution.
- **Designation of Special Courts in each district** for adjudicating upon claims of compensation for wrongful prosecution. The cause for action would arise if there was malicious prosecution or prosecution without good faith and there was an acquittal.
- **Compensation, both pecuniary and non-pecuniary, to effectuate the rehabilitation of the victims into the society:** While pecuniary assistance will be in terms of monetary award as may be determined by special court, non-pecuniary assistance will be awarded in the form of services such as counseling, mental health services, vocational/employment skills development, removal of disqualifications that might affect chances of accused persons finding employment in public and private sectors, admission into educational institutes, etc.

- **Factors to determine compensation:** Compensation in such cases would depend upon various factors, including the seriousness of the offence, severity of punishment, the length of incarceration, loss or damage to health, psychological and emotional harm and the status of the victim in the society.

## 1.5. PROXY VOTING BY NRIS

**Why in news?**

Recently, the Lok Sabha passed the Representation of the People (Amendment) Bill, 2017 to allow for the proxy voting by the Non-Residential Indians through amendment in Section 60 (special procedure for voting by certain classes of persons).

**Background**

- As of now, overseas Indians are free to cast their votes in the constituencies where they are registered. The Bill seeks to give them the option of proxy voting, which till now is only available to service personnel.
- The proposal includes a provision that made it mandatory for NRIs to nominate a new person every time they vote in an election, unlike service personnel who are allowed to nominate a permanent proxy.
- On the direction of the Supreme Court of India the Election Commission constituted a committee for 'Exploring Feasibility of Alternative Options for voting by Overseas Electors', which expressed the feasibility of both proxy voting and e-postal ballot.
- It is not clear yet how NRIs will nominate their proxies. The Election Commission will lay down the procedure by amending the Conduct of Election Rules, 1961, after the Bill is passed by both Houses of Parliament.
- The bill also proposes to replace the term 'wife' with 'spouse' (in case of service voters), thus making the provision gender neutral.

**Proxy Voting in India**

- Voting in an Indian election can be done in three ways-
  - in person
  - by post
  - and, through a proxy.
- Under proxy voting, a registered elector can delegate his voting power to a representative.
- This was introduced in 2003 for elections to the Lok Sabha and Assemblies, but on a limited scale.
- Only a "classified service voter" — a definition that includes members of the armed forces, BSF, CRPF, CISF, General Engineering Reserve Force and Border Road Organisation — is allowed to nominate a proxy to cast vote on his behalf in his absence.
- A classified service voter can also vote by postal ballot.

**Criticism of the Proxy Voting**

- **Vulnerable nature of the process** of using a proxy can amount to malpractices and misuse, like-
  - The proxy voters might not choose to cast their votes according to the will of the NRI who assigns the proxy.
  - The **loss of secrecy** while using the mechanism is a major drawback.
  - It might also lead to **purchasing of the votes**.
- **Implementational Challenges**- Moreover, the Indian Diaspora abroad is spread in different parts of the world, which will pose an implementation challenge when it comes to proxy voting. Further, the registration of NRI voters has been relatively lower than their number, so more important is to extend registration facilities.
- **Monetary Influence**- Only the parties with sufficient financial resources will be able to roll out significant promotional campaigns abroad, which may **tilt the balance of power against smaller**, regional parties. Also, there is no adequate mechanism to track how much is spent by these parties outside India.
- **Discrimination against Domestic migrants**- It might increase the discrimination amongst the migrants who still do not have the voting rights, and also amongst various categories of non-residents.

**Proxy voting in other countries**

- UK - A British citizen living abroad can either travel back to vote in person or vote by post. He/she can also nominate a proxy but this is subject to eligibility rules.
- US - Expatriates can vote for federal office candidates in primary and general elections. Once registered, an overseas American voter will receive a ballot paper by email, fax, or download, depending on the US state.

**Conclusion**

- Along with the challenges and concerns related to proxy voting, it is also important to understand that NRIs are a large stratum of our population, large enough to not be overlooked.

- Apart from that, history stands as a testimony to their contribution to Indian economy as well as India's bilateral or multilateral agreements. Where on one hand they have an impact on India they are also in turn impacted by the events in the country. Thus, steps like proxy voting are considered.
- There are various alternative ways to proxy voting, viz. Personal voting (setting up booth at the embassy itself), e-voting, etc.
- If the Parliament gives its nod to proxy voting, there are various safeguards that it may follow like-
    - An NOC must be issued in advance by the NRI voter to the proxy and an e-vote or postal ballot must be casted to cross-verify the whole process.
    - Preparation of electoral roll and the database must be kept secretive to avoid any purchasing of votes.

## 1.6. MANIPUR PEOPLE'S PROTECTION BILL, 2018

**Why in News?**

A new bill was recently passed by the Manipur assembly to regulate the entry and exit of "outsiders" on the lines of British-era regulatory regime.

**Key features of Manipur People's Protection Bill, 2018**

- The bill seeks to "protect the identity of indigenous people" of the state from the influx of outsiders**.**
- **It defines "Manipuris" and "non-Manipuris"** and seeks to regulate the entry and exit of the latter in order to protect the interests and identity of the former.
- According to the Bill, Manipuris include the Meiteis, the Pangal Muslims, Manipuri scheduled tribes listed under the Constitution and Indian nationals **who have been living in Manipur before 1951.**
- Those who didn't fall under this umbrella were deemed "non-Manipuris" and were given a month to register themselves to the authorities.
- For this Bill to become a reality, it requires a nod from the President of India.

**What is Inner Line Permit (ILP)?**

- The ILP is a British-era system to regulate entry and exit of outsiders in a protected area.
- It is operational in Arunachal Pradesh, Mizoram and Nagaland.
- The system requires outsiders to obtain a permit from the government to enter the designated territory.
- It can be issued for travel purposes solely.
- The main objective of the ILP system is to provide a special protection of the distinct identity and safeguard for the peaceful existence of the indigenous people of the state.

**Issues with the Bill**

- **The Bill sets 1951 as the base year** to identify locals and prevent an influx of outsiders. If approved by the Governor and made an Act, people who came to Manipur after 1951 would be **viewed as "foreigners" and would have no voting or land rights**
- A 1951 cut-off was **problematic for tribal communities** as data of several villages in the National Register of Citizens, 1951, as well as in the Village Directory of 1951 is not available or not accurate – which, in turn, could render many tribals as non-state subjects
- The **state of Manipur was formed on January 21, 1972** and thus a number of stake holders wanted it to be the cutoff date.
- The tribal protestors claimed an Inner Line Permit would serve only the interests of the Meiteis, and enable them to encroach upon the hills and tribal lands.

## 1.7. VARIETIES OF DEMOCRACY REPORT

**Why in news?**

Recently **The Varieties of Democracy Report for 2018** (V-Dem) has been released which provides the most sweeping global examination of democracy.

**Varieties of Democracy (V-Dem)**

- It is an international research project which aims to develop new indicators of democracy in all countries all over the world from 1789 to the present.
- The project is led by the **V-Dem Institute** at the University of Gothenburg, Sweden.
- It covers 178 countries
- It is backed by the European Union and funded by a multitude of different institutions (government and non-government) and think tanks.

**Concerns regarding India**

- India is indicted as a "**backslider**" since the **quality of democracy has declined** over the past ten years and sharply declined since 2014
- India retains a system of free, fair multi-party elections and thus, qualifies as an **Electoral Democracy**
    - But it has seen major erosion in indicators such as Freedom of Expression, Rule of Law and Freedom of Association

**Different Categories for Classification**

- **Liberal Democracy**: where every citizen has equal rights and access to the law; there's strong freedom of expression; good institutional systems to deliver justice, freedom of association, participatory elections, etc**.**
- **Electoral Democracy**: Here citizens have the vote but certain categories of people such as women and poor suffer exclusion and lower standards apply when it comes to human rights, freedom of expression and association, etc.
- **Electoral Autocracy:** where citizens have the vote but not much else. Repression, censorship and institutionalised intimidation are visible in such places.
- **Closed Autocracy:** In a closed autocracy is totally free of being answerable to its people, and their rule is carried out with fear and intimidation.

# 2. INTERNATIONAL RELATIONS

## 2.1. INDIA USA 2+2 TALKS

**Why in News?**

Recently, India and the USA held the first edition of their 2+2 dialogue involving Indian External Affairs and Defence Ministers and their American counterparts in New Delhi, where they also signed long-pending **Communications Compatibility and Security Agreement (COMCASA).**

**Major outcomes of the talk**

- **Signing of COMCASA:** India and the USA began a new generation of military and security cooperation by signing Communications Compatibility and Security Agreement (COMCASA).
- **Setting up of a hotline between External Affairs Minister and Defence Minister with their American counterparts:** this will help maintain regular high-level communication on emerging developments.
- **Tri-service exercise:** India and U.S. will hold a **first-ever tri-service exercise** on the east coast of India in 2019 and further increase personnel exchanges between the two militaries and defense organizations.
- **Deepening of maritime cooperation in Western Indian Ocean:** the ministers committed to start an exchange between the US Naval Forces Central Command (NAVCENT) and the Indian Navy, announced deployment of an Indian liaison officer at NAVCENT, which is incharge of naval operations in Afghanistan, Pakistan and the oil rich Gulf Countries.
- **Expressed commitment towards working together on regional and global issues, including in bilateral, trilateral and quadrilateral formats:** meeting also focused on regional stability in South Asia, South-East Asia and Indo-Pacific and both sides also expressed support for an Afghan-led, Afghan-owned peace and reconciliation process.
- **Promoting defence innovation:** a Memorandum of Intent was signed between the U.S. Defense Innovation Unit (DIU) and the Indian Defence Innovation Organization — Innovation for Defence Excellence (DIO-iDEX), which will look into joint projects for co-production and co-development projects through the Defense Technology and Trade Initiative (DTTI).
- **Negotiations on Industrial Security Annex (ISA):** The two defence ministers also announced readiness to begin negotiations on an Industrial Security Annex (ISA) that would support closer defence industry cooperation and collaboration. An ISA is required to enable private Indian participation in defence production and is particularly important as India opens up defence manufacturing to the private sector in a big way.

**About Communications Compatibility and Security Agreement (COMCASA)**

- COMCASA is one of the four foundational agreements that the U.S. signs with allies and close partners to **facilitate interoperability** between militaries and sale of high end technology.
- COMCASA, an India-specific version of the **Communication and Information on Security Memorandum of Agreement (CISMOA),** comes into force immediately and is valid for a period 10 years. Both countries will implement this agreement in a manner that is consistent with the national security interests of the other.

**Significance of COMCASA**

- **Facilitate access to advanced defence systems and enable India to optimally utilise its existing US-origin platforms:** Indian armed forces will get to fully exploit the capability of the military platforms procured from the US. For instance, the P-8I reconnaissance aircraft currently operating at limited capacity.
- **India will get access to Combined Enterprise Regional Information Exchange System (CENTRIXS):** CENTRIX is the secure communication system network of the US. Navy ships with CENTRIXS systems on board can communicate securely with the U.S. Navy when needed and can benefit from the wider situational picture of the region as they have a large number of ships and aircraft deployed.
- **Bolsters India's defence and enhances its capacity to project power into the Indo-Pacific region:** it would enable Indian military to get a better picture of the Indian Ocean Region (IOR) which is seeing increasing Chinese movements.
- **Ensures interoperability between military aircraft and other vehicles within India and with other countries:** It improves India's ability to fight alongside the other global navies with similar equipment that are major players in the Indo-Pacific, such as Japan, South Korea, Australia and Singapore.

- **Promotes modernisation and technological advancement of defence equipment**.
- **COMCASA allows us to utilise US communications core that is among the best in the world:** During Doklam standoff, for instance, India benefitted from US intelligence on the placement of Chinese troops on the plateau in the high Himalayas. However, in absence of a foundational agreement on sharing of sensitive intelligence such as the COMCASA, US inputs were subject to a time-lag.

**Concerns with the COMCASA Agreement:**

- **Allow U.S. Navy access to India's own secure communication network** and also that the information shared with the U.S. will be accessible to Pakistan: this agreement may harm India's strategic autonomy by making its own communication network vulnerable to US spying.
- **US may manipulate critical decision making:** Some critics are concerned that the US will retain control over its equipment sold to India under this pact and may manipulate decision-making.

**Way Forward**

- India had signed the **General Security Of Military Information Agreement (GSOMIA) in 2002** and the **Logistics Exchange Memorandum of Agreement (LEMOA) in 2016.** The last one remaining is the **Basic Exchange and Cooperation Agreement for Geo-spatial Cooperation (BECA),** signing which would complete the four foundational agreements that US have with its closest allies.
- From the increased tempo of FONOPs (Freedom of Navigation Operations) in the South China Sea to the Quad to renaming the Pacific Command as the Indo-Pacific Command to the latest US Strategy document, the US administration is demonstrating greater stability and commitment to balancing China.
- Talks are ongoing on granting waiver for India from US sanctions on Russia and Iran as it was said that USA doesn't intend to penalise great strategic partners like India. A waiver provision has now been introduced to cover India, Indonesia and Vietnam.
- Launch of the 2+2 Dialogue aims to provide a positive, forward-looking vision for the India-U.S. strategic partnership and to promote synergy in their diplomatic and security efforts.

## 2.2. INDIA MYANMAR RELATIONS

**Why in news?**

Recently India and Myanmar opened two land border crossings through a Land Border Crossing Agreement.

**More about the news**

- The two crossing points are at Moreh in Manipur, opposite Tamu in Myanmar's Sagaing division, and Zokhawthar in Mizoram, opposite Rihkhawdar in Myanmar's Chin state.
- It marked the abolishing of special land entry permission which was previously required for visitors entering the country via land routes.

**Significance & Concerns**

Myanmar is an important part of India's Act East Policy and the step is crucial for the policy in following ways-

- **Improved Connectivity**- Myanmar is crucial for New Delhi's connectivity initiatives in the region, particularly in light of its non-participation in the Beijing-led Belt and Road Initiative. The efforts are complimented by various other ongoing connectivity projects in the region.

**Other connectivity projects through Myanmar**

- **IMT Trilateral Highway:** a regional highway being constructed under India's Act East policy. It will connect Moreh in India with Mae Sot, Thailand via Myanmar. The highway is expected to boost trade and commerce in ASEAN–India Free Trade Area, as well as with rest of Southeast Asia.
- The second land border crossing at Zokhawthar-Rhikhawdar will be connected to the Trilateral Highway at Kalemyo, near Kalewa in Myanmar.
- **Motor Vehicle Agreement:** India, Myanmar and Thailand has been negotiating for finalising and implementing a Motor Vehicle Agreement .This agreement is necessary to utilise physical road infrastructure on IMT Trilateral Highway and other infrastructural linkages.
- **Kaladan Multi-Modal Transit Transport Project** is a project that will connect the eastern Indian seaport of Kolkata with Sittwe seaport in Rakhine State, Myanmar by sea. In Myanmar, it will then link Sittwe seaport to Paletwa, Chin State via the Kaladan river boat route, and then from Paletwa by road to Mizoram state in Northeast India.

- It has eased the connectivity between the people having brethren across the long border shared between the two countries.

- **Support India's involvement in Myanmar over China's increasing influence**- Projects like Kaladan are already facing delays which can be cured to some extent by the agreement.
- **Push to Tourism**- It will help in the growth of tourism in Northeast India and Myanmar.
  - This will help in the growth of **medical tourism in the Northeastern states** of the country, which offer high quality medical services at reasonable rates, which may interest people in the border regions of Myanmar.
- **Sign of improvement in relations**- The opening of these land routes also reflects the rapid growth in India-ASEAN ties, which was exemplified by the presence of the heads of state of all the ASEAN states at India's Republic Day celebrations earlier in January this year for the ASEAN-India commemorative summit.

Apart from the specified significance, there are **some concerns** that should also be kept in mind. For example, the agreement as a sanguine for better connectivity is incomplete till the time other **big connectivity projects (box) are not completed**. Also, with better connectivity comes the need for improving checks against **illegal immigrants and insurgents**.

**Way forward**

- Relations have indeed moved a long way since 1992 when New Delhi became a sectoral dialogue partner of ASEAN. Steps like these will aid India's outreach to the ASEAN countries. Myanmar is India's land bridge to ASEAN and hence closer connectivity with Myanmar is *sine qua non* for the success of India's "Act-East Policy".
- India shares many common concerns with Myanmar that range from socio-economic development, shared concerns over insurgency and regional peace and preserving sovereignty in light of growing Chinese assertiveness.
- India needs to seize this opportunity and expedite the work on ongoing projects while at the same time exercising soft power through constructive aid and cultural exchange.

## 2.3. BIMSTEC SUMMIT

**Why in News?**

Recently, the 4th summit of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) was held in Nepal.

**More about 4th summit**

- The meeting is taking place after a gap of four years, the 3rd BIMSTEC Summit took place in Nay Pyi Taw in 2014.
- Several important decisions taken in the summit include:
  - **Drafting a charter** for BIMSTEC, which has functioned so far on the basis of the Bangkok Declaration of 1997.
  - **Setting up of a Permanent Working Committee** to provide direction during the period between two summits and also to prepare the Rules of Procedure.
  - The Secretariat has been promised **additional financial and human resources** and enhancement of its role to coordinate, monitor and facilitate the grouping's activities.
  - Establishing a **BIMSTEC Development Fund,** with voluntary contributions from the Member States.
  - Welcomed Thailand proposed **new strategy of five pillars** (viz. connectivity, trade and investment, people-to-people contacts, security, and science and technology) as a part of rationalisation of focus sectors
  - **Strongly condemn terrorism** in all its forms and manifestations.

**Achievements of BIMSTEC**

- **BIMSTEC Coastal Shipping Agreement** and **BIMSTEC Motor Vehicle Agreement (MVA)** are being negotiated.
- BIMSTEC countries have completed negotiations for the Memorandum of Understanding (MoU) on the establishment of the **BIMSTEC Grid Interconnection.**
- BIMSTEC Agreement on Mutual Assistance on Customs Matters has been signed and is under ratification.
- Considerable progress has been achieved in areas such as cooperation among national security agencies, cooperation to check security threats such as smuggling, human trafficking, drugs and piracy, etc.
- **Secretariat has been established at Dhaka** along with few BIMSTEC Centres in the region.

**Significance of BIMSTEC**

- Around **22% of the world's population** live in the seven countries around the Bay of Bengal, with a combined GDP close to $2.7 trillion. A fourth of the world's traded goods cross the bay every year.
- It has **high economic potential,** given the region's economic dynamism, huge markets and rich natural resources.
- It appears as a **connector to multiple regional initiatives.** Among seven-member countries, five members of BIMSTEC are also members of SAARC, two are part of ASEAN and six are part of SASEC.
- **Bangladesh** views BIMSTEC as a platform to position itself as more than just a small state in the Bay of Bengal and Sri Lanka sees it as an opportunity to connect with Southeast Asia and serve as the subcontinent's hub for the wider Indian Ocean and Pacific regions.
- **For Nepal and Bhutan,** BIMSTEC stands to further their aspirations to reconnect with the Bay of Bengal region and escape their landlocked geographic positions.
- **For Myanmar and Thailand,** connecting more deeply with India across the Bay of Bengal would allow them to access a rising consumer market and, at the same time, balance Beijing and develop an alternative to China's massive inroads into Southeast Asia.
- **Importance for India**
    - For India, it is a natural platform to fulfil our key foreign policy priorities of '**Neighbourhood First**' and '**Act East**'.
    - **Stagnation of SAARC** is also a key reason for India to reach out to BIMSTEC as stagnation limited the scope of India's growing economic aspirations as well as the role it could play in improving regional governance.
    - BIMSTEC provides new battleground for India-China. It could allow India to push a constructive agenda to **counter Chinese investments** such as in Belt and Road initiative, and follow international norms for connectivity projects which Chinese projects are widely seen as violating.
    - It could develop codes of conduct that **preserve freedom of navigation** and apply existing law of the seas regionally.
    - It could stem the region's creeping militarisation by instituting, for instance, a **Bay of Bengal Zone of Peace** that seeks to limit any bellicose behaviour of extra regional power

**Challenges**

- **BIMSTEC Free Trade Agreement** which was negotiated in 2004 to boost the intra-regional trade from its present level of 7% to 21% is yet to be finalized.
- **India-Myanmar-Thailand Trilateral Highway** has yet not been completed, which is crucial to trade movement between the countries.
- BIMSTEC has the advantage of having a number of rising economies in the region but it is one of the **least integrated parts of the world.**
- **Lack of consistency in the Summit:** In its 2 decades, BIMSTEC leaders met only thrice at the summit level.
- It has **slow pace of growth** due to absence of focus on areas of cooperation, weak institutional mechanism, financial constraints etc.
- **Terrorism** is the most significant threat in the Bay of Bengal region as well as South East Asia and there is need for more cooperation amongst the member states on this issue.
- **Maritime Security Issues:**
    - **2015 Rohingya refugee crisis** has made thousands of 'boat people' vulnerable to recruitment by criminal networks, sea pirates, and Islamist militants.
    - The Bay is also prone to some of the most severe natural disasters, incidents of sea piracy, and illegal, unreported, and unregulated (IUU) fishing.
    - At present, maritime security cooperation initiatives within the sub-region do not include all the coastal Bay states– for instance, CORPAT exercises, Milan exercises, and the 'IO-5' grouping.

**Way forward**

- To make BIMSTEC further lucrative, there is a need for increasing its membership base. BIMSTEC should consider **expanding its membership** to Indonesia, Malaysia, and Singapore - the three major Asian powers
- BIMSTEC shall give special focus on **BIMSTEC cross-border e-commerce and digital connectivity.** It may also consider opening a negotiation on BIMSTEC Railway Agreement
- **More socio-cultural interactions** will build greater sense of ownership of BIMSTEC among the people of the region.

- A regional trade facilitation agreement is also needed for cooperation in the matter of customs, training and capacity building, exchange of information, settling disputes, etc. It should also aim for **regulatory harmonisation** to ensure export of goods without requiring additional certification.
- **Strengthen IPR cooperation** to help countries move higher up in the technology ladder, encourage transfer of technology and stimulate innovation and creativity.
- BIMSTEC countries should facilitate air connectivity, particularly to **link India's Northeast with Bangladesh, Myanmar and Thailand.** It may prove to be a catalyst for promotion of tourism and services trade.
- BIMSTEC should consider **forging tie-ups with other multilateral organizations** in areas like manpower training and knowledge exchanges.

## 2.4. INDIAN OCEAN CONFERENCE

**Why in News?**

The **third** edition of **Indian Ocean Conference** is set to begin on August 27 at Hanoi, the capital of Vietnam

**More on the news**

- The theme of the two- day conference will focus on '**Building Regional Architectures'**, particularly with regards to trade and commerce, security and governance.
- This year, the Indian Ocean Conference will emphasise on better cooperation, strategic collaboration and governance architectures.

**Indian Ocean Conference**

- The Indian Ocean Conference is initiated by **India Foundation** along with its partners from Singapore, Sri Lanka and Bangladesh
- It is an annual effort to bring together Heads of States/Governments, Ministers, thought Leaders, scholars, diplomats, bureaucrats and practitioners from across the region.
- Two successful editions of the Conference have been hosted so far in 2016 and 2017

**Significance of Indian Ocean**

- The sea lanes in the Indian Ocean are considered among the most strategically important in the world— more than 80 percent of the world's seaborne trade in oil transits through Indian Ocean choke points. Around 95 per cent of India's trade by volume and 68 per cent of trade by value come via the Indian Ocean.
- The region is home to continually evolving strategic developments including the competing rises of China and India, potential nuclear confrontation between India and Pakistan, the US interventions in Iraq and Afghanistan, Islamist terrorism, growing incidence of piracy in and around the Horn of Africa, and management of diminishing fishery resources.
- The region is **rich in energy resources and minerals** such as gold, tin, uranium, cobalt, nickel, aluminium and cadmium, and also contains abundant fishing resources
- It is important for securing the free passage of trade and energy, ensuring the sustainable and equitable exploitation of fishing and mineral resources, and managing humanitarian assistance and disaster relief.

## 2.5. ASIAN DEVELOPMENT BANK- STRATEGY 2030

**Why in News?**

Recently, Asian Development Bank (ADB) released its long-term corporate strategy i.e. Strategy 2030.

**About the ADB- Strategy 2030**

- It is policy framework for ADB that sets out the its broad vision and strategic response to the **evolving needs of Asia and the Pacific.**
- Social Dimension: In contrast to earlier Strategy 2020- the Strategy 2030 document emphasis on human and social factors, in addition to the usual infrastructure and the private sector.

- Regional or Country Specific Approach: Due to sheer diversity of this region (include both landlock and Small island countries), ADB has, for the first time, adopted a differentiated approach to various groups of member nations.
- **One ADB Approach:** This includes bringing together expertise and knowledge in a range of areas across the ADB as an institution.

**Priority Areas of Strategy 2030**

- Addressing remaining poverty and reducing Inequalities: Under this policy efforts will also address **non-income dimension** of poverty.
- Accelerating progress in gender equality
- Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability
- Making cities more liveable
- Promoting rural development and food security
- Strengthening governance and institutional capacity
- Fostering regional cooperation and integration

**Related Information**
**About Asian Development Bank (ADB)**

- ADB was founded in 1966 and India is a founding member to it.
- The ADB has 67-member countries, including — 48 from the Asian region.
- ADB has been led conventionally by a Japanese governor.
- Top 5 shareholders in ADB are: Japan (15.6%), United States (15.6%), People's Republic of China (6.4%), India (6.3%) and Australia (5.8%)
- It **provides direct assistance to private enterprises of developing member countries** through equity investments and loans.

**India and ADB**

- India was a founding member of ADB and is now the fourth-largest shareholder, but operations in the country began only in 1986, when India opted to become a borrowing member.
- The **country partnership strategy (CPS) 2018-2022** will focus on three pillars.
  - Pillar 1 will boost economic competitiveness to create more and better jobs by expanding infrastructure networks for transport and energy along economic corridors, enhancing management of corridor development and urban centers, and addressing the skills gap to support industrialization.
  - Pillar 2 will provide inclusive access to infrastructure networks and social services by improving the infrastructure bottlenecks in lagging regions, providing better municipal services for the urban poor, and supporting investments in rural infrastructure to improve agricultural productivity and reduce the growing rural-urban income gap. Efficient public sector management will be supported to create fiscal space for investments in inclusive growth for social and rural development.
  - Pillar 3 will address environmental degradation through mitigating the negative impacts of climate change and promoting sustainable natural resource use in the project design.

## 2.6. UN DEVELOPMENT SYSTEM

**Why in news?**

The UN General Assembly (UNGA) has adopted a resolution on the repositioning of the UN development system.

**More on the resolution**

- The "repositioning" process began with an ECOSOC dialogue series in 2014-2015 on positioning the UN development system for a **post-2015 era.**
- Repositioning is required in order to align the development system with the **2030 Agenda for Sustainable Development**, especially to support developing countries.
- It calls for UN Development Assistance Frameworks (UNDAFs) to **better reflect country priorities** and country needs as they would be

**Certain principles for repositioning of UN development system**

- The countries of operation should develop their own plans regarding how to maximize the contribution by the UN development system (UNDS) in support of their own plans. In this, the **role of UNDS in mobilising means of implementation** (including finance & capacity building) should be sufficiently emphasised.
- UNDS should **prioritize economic structural transformation** in the programming and work of the UN Country Teams.
- The participation of countries of operation should be there in the early stages of the selection of the new RCs.
- For those sustainable developmental challenges which can be better addressed at regional level, **regional capacities** should be strengthened through the work of Regional Commissions.
- The role of member states with respect to **managing risks and ensuring oversight** should be clear.

prepared in full consultation and agreement with national governments, through an open and inclusive dialogue

- In repositioning, an implementation plan for the inception of the **reinvigorated Resident Coordinator (RC) system** is presented. The functions of the Resident Coordinators (RCs) of the UN system in each country are separated from those of the resident representative of the UN Development Programme (UNDP).
- It also endorses the **transformation of the Development Operations Coordination Office** (DOCO) as a stand-alone coordination office within the Secretariat to assume managerial and oversight functions of the RC system.
- It also presents an implementation plan for operationalization of the funding arrangements for the new RC system – **hybrid funding**, i.e., through the United Nations regular budget as well as voluntary contributions by UN Member states.
- It stresses on **national ownership** with strong focus on **accountability and results.**

## 2.7. CASPIAN SEA BREAKTHROUGH TREATY

**Why in News?**

Recently, five Caspian Sea States – Azerbaijan, Iran, Kazakhstan, Russia and Turkmenistan - signed a breakthrough agreement on Caspian Sea's legal status.

**Background**

- The 5 nations have tried to define the Caspian Sea's legal status since the collapse of Soviet Union in order to divide up the waters and its natural resources for new drillings and pipelines. Iran, Azerbaijan and Turkmenistan have contested the ownership of several oil and gas fields.
- According to an estimate by the US Energy Information Administration in 2013, the Caspian offshore reserves contain atleast 20 Billion Barrels of Oil and more than 240 trillion Cubic Feet of natural gas.
- These nations have already developed offshore oil and gas reserves that are located near enough to their coast.
- Projects in the northernmost waters- Kazakhstan's giant Kashagan field and Russia's Filanovsky and Korchagin deposits- are seen as sources of future oil-output growth for the countries.

**Significance of the Treaty**

- The treaty declares 15 Nautical Miles from the coastline as Sovereign waters and an Exclusive Economic Zone, with a further 10 nautical miles to be used for fishing and beyond this would be open waters.
- **Agreement included economic as well as security cooperation:** this would have enormous implications for the global energy market and addressing security issues as the Caspian Sea is situated near the zones of international terrorist activities. (Afghanistan and West Asia)
- The treaty ends a conflict over whether the Caspian is a sea or a lake, granting it a **special legal status** and clarifying the maritime boundaries of each surrounding country. The major concern is if it is a sea, it would become governed by international maritime law (UNCLOS) and outside powers would have access to these waters.
- It allows each member nation to lay pipelines with consent only from the neighbouring states affected, rather than from all Caspian Sea Nations. The development of seabed reserves will be regulated by separate deals between Caspian Nations, in line with international laws which

essentially cements the current situation as countries such as Kazakhstan and Russia already have bilateral accords on joint projects.

- It might also remove a legal barrier to building a **Trans- Caspian gas pipeline** from Turkmenistan to Europe.
- It prevents the Caspian nations from opening their borders to third party aggressors such as the US and NATO or allowing any foreign military presence on Caspian waters.

**Remaining Issues**

- Delimitation of oil and gas rich Caspian Sea bed will require additional agreements between littoral nations.
- Russia is reluctant to allow Turkmenistan to pursue its proposed 300 Km gas pipeline to Azerbaijan which would open its huge cheap gas reserves to European Market at present dominated by Gazprom (Russian company).

## 2.8. INDIA BECOMES PRESIDENT OF AIBD

**Why in News?**

Recently, India has been elected as the President of the Asia-Pacific Institute for Broadcasting Development (AIBD) for a period of two years.

**More on News**

- President status will help India in leveraging itself as the broadcasting and media hub in Asia Pacific Region.
- India got the presidency of the organisation for the first time by defeating Iran in the election.

**Related Information**

- **Asia-Pacific Broadcasting Union (ABU)**
  - It was established in 1964 as a non-profit, non-governmental, non- political, professional association.
  - ABU promotes the collective interests of television and radio broadcasters as well as key industry players and facilitate regional and international media co-operation.
- **International Telecommunication Union**
  - **It is the United Nations specialized agency for information and communication technologies – ICTs.**
  - It allocates global radio spectrum and satellite orbits.
  - It develops the technical standards that ensure networks and technologies seamlessly interconnect.

**About Asia-Pacific Institute for Broadcasting Development (AIBD)**

- It is a regional inter-governmental organisation servicing countries of the United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP) in the field of electronic media development.
- It was established in 1977 under the auspices of UNESCO and the **Asia-Pacific Broadcasting Union (ABU)** is a founding organisation of the Institute and is a non-voting member of the General Conference.
- It is hosted by Malaysia and its secretariat is located in Kuala Lampur.
- The International Telecommunication Union (ITU) and United Nations Development Programme (UNDP), are also **founding organisations of the Institute**.
- Its function is to achieve a vibrant and cohesive electronic media environment in the Asia-Pacific region through policy and mobilizing the intellectual and technological resources available within the national broadcasting organizations.

## 2.9. SWEDEN'S FEMINIST FOREIGN POLICY MANUAL

**Why in news?**

Sweden recently launched foreign policy manual.

**More on News**

- In December 2014, Sweden became the first country to adopt a feminist foreign policy. Led since its inception in 2014, its goals include the promotion of economic emancipation, fighting sexual violence and improving women's political participation.
- As an example, In 2015, Sweden's diplomatic ties with Riyadh were frozen after the Swedish Foreign Minister called Saudi Arabia a "dictatorship", denouncing its treatment of women in particular in a way that other western diplomats might have avoided while dealing with the oil-rich state.
- The manual stated that while gender equality was "an object in itself," it was "essential" in achieving more general government objectives, like peace, security and sustainable development.

**What is Feminist Foreign Policy?**

- It is a course of action towards those outside national boundaries that is guided by a commitment to gender equality. It takes a step outside the black box approach of traditional foreign policy thinking and its focus on military force, violence, and domination by offering an alternate and intersectional rethinking of security from the viewpoint of the most marginalised.
- Traditional gender stereotypes exclude women from power or restrict them to governance of "soft" areas. These stereotypes associate violence with men and portray it as an appropriate tool for solving conflicts and maintaining dominance. Feminist foreign policy seeks to counter these value preferences and stereotypes.

# 3. ECONOMY

## 3.1. FALLING RUPEE

**Why in news?**

Recently, the Indian rupee weakened past the 71 mark for the first time ever.

**More on news**

- The rupee has registered a loss of about 10% of its value against the dollar since the beginning of the year making it the worst-performing currency in Asia.
- Other emerging market currencies, most notably the Turkish lira, the Argentine peso and the South African rand, have suffered much larger losses owing to a serious loss of confidence among investors.

**Reasons of falling rupee**

- **Increasing demand for the dollar across the globe**: The tightening of liquidity in the West, with the U.S. Federal Reserve raising interest rates, has played a major role in the strengthening of the dollar since February this year. Investors who earlier put their money in emerging markets have recently preferred American assets, which now yield higher returns.
- **Higher domestic inflation in emerging economies when compared to the West**: Thus, it is natural for these currencies to slide in value over time against the dollar and other major Western currencies.
- **Trade war** between China and America, leading to import restrictions with high tariffs is causing dollar to appreciate. Huge dollar purchases by oil importing companies have also weighed heavily on rupee.
- **Oil prices: Iran sanctions** have been driving oil prices higher despite OPEC move to raise output. The benchmark Brent crude surpassed the significant $75-mark a barrel. This is bad for India as it is third largest importer of oil, hence **current account deficit** has been coming under pressure.
- **More imports than exports:** India's import bill has been significantly rising without increase in net exports. India's current account deficit is rising and is expected to go up to 2.5-3% of the gross domestic product (GDP) in the current financial year. Differently put, India is importing a lot more than it is exporting. Higher CAD in an environment of tightening financial conditions may continue to put pressure on the rupee

**Impact of falling rupee**

- **On imports**: the country's imports become more expensive as it takes more rupees to pay for the same quantum of imports.
- **On competitiveness**: As fewer dollars are required for a buyer to pay for the same quantity of exports, India may gain its competitiveness which has been gravely hurt by an exchange rate policy that has prioritised a muscular rupee. It would also promote Make in India**.**
- **On inflation**: More expensive imports are likely to drive inflation upward, especially in India where input products constitute a large part of our imports. It also impacts the oil import bill which plays its own part in pushing inflation up. Rise in inflation would hurt investors sentiment as well.
- **On GDP growth:** On the one hand, costlier inputs and the subsequent increase in the prices of finished goods may have a positive impact on GDP while on the other hand, consequent decrease in demand due to higher prices could nullify this.
- **Widening of deficits:** As per analysts, every $10 per barrel increase in oil prices could worsen current account and fiscal balances by 0.4% and 0.1% of GDP respectively.
- **On tourism**: trips abroad turning more expensive. On the flip side, the domestic tourism could grow as more tourists visit India since their currency now buys more here.
- **On employment:** In the medium term, export-oriented industries like Pharma sector, IT, gems and jewellery etc. may also create more jobs.

**Steps that can be taken by government**

- **Long term solution**
  - Reduce heavy dependence on imports as well as on oil.

- **Boost export industries** by measures such as ensuring that exporters have easier access to tax refunds; a war-footing attack on red tape at the borders; and a clear commitment to opening up to new market-enhancing trade deals.
- **Attract FDI instead of FII**, through simplification of procedures, laws and dispute redressal. The rules for foreign borrowing should be liberalised by Indian firms to ensure higher inflows.
- **Maintain limit on deficit**: Although India's fiscal position has improved in recent years, compared to peers, the combined deficit is still on the higher side. The government should not allow the deficit to slip at this stage as it will increase macroeconomic stability risks.

- **Short term solution**
  - **Increase in interest rates** by central bank to control money outflow. However, cost of borrowing increases due to this which may cause fall in investment in the country.
  - **Using foreign reserves to reduce volatility:** As of June 22, the RBI had foreign exchange reserves of $407.81 billion, which it can sell in the open market. It is important to note, though, that reserves are only useful in reducing volatility and are not an antidote for poor economic management. If financial markets start believing that the country has problems at the fundamental level, then defending the currency can become extremely difficult.

## 3.2. CONCESSION FINANCING SCHEME

**Why in News?**

Recently, government extended the Concessional Financing Scheme (CFS) for five years till 2023.

**Related Information**
**LIBOR**
- LIBOR or ICE LIBOR is a benchmark rate that some of the world's leading banks charge each other for short-term loans.
- It stands for Intercontinental Exchange London Interbank Offered Rate and serves as the first step to calculating interest rates on various loans throughout the world.

**About Concession Financing Scheme**

- The scheme is aim to support Indian entities bidding for strategically important infrastructure projects abroad.
- Under the scheme government provide counter guarantee and interest equalization of 2 % to EXIM Bank to offer concessional finance to any foreign Govt. or controlled entity, if any Indian entity, succeeds in getting contract for the execution of a project.
- It will now cover all Indian entities, compared to the earlier stipulation of minimum 75 per cent Indian shareholding.
- EXIM Bank extends credit at a rate not exceeding **LIBOR** (avg. of six months) + 100 bps. The repayment of the loan is guaranteed by the foreign govt.
- Under the scheme **Ministry of External Affairs** selects the project, keeping in view strategic interest of India and sends the same to the Department of Economic affairs.

**Significance of the scheme**

- It will help in generate substantial backward linkage induced jobs, demand for material and machinery in India and also a lot of goodwill for India.
- **Bidding large Project:** Prior to the introduction of CFS, Indian entities were not able to bid for large projects abroad since the cost of financing was very high for them and bidders from other countries such as China, Japan, Europe and US.

## 3.3. ENABLING MONETIZATION OF INFRASTRUCTURE ASSETS IN INDIA

**Why in News?**

Government is drawing up a plan to sell public sector Infrastructure assets

**More on the news**

- The government is identifying assets, including rail lines, national highways and power transmission lines, for monetising through **infrastructure investment trusts** (InvITs).

**Significance**

- Monetisation of assets being held in public sector undertakings through creation of InvITs will fast-track the agenda of **improving infrastructure in the country.**
  - This year's Budget suggested the use of InvITs to monetise roads by the National Highways Authority of India (NHAI).
- The government feels the role of central public sector enterprises is to develop new infrastructure and create a market rather than just earn returns from their investments.

**Infrastructure Investment Trusts (InvITs)**

- These are mutual fund like institutions that enable investments into the infrastructure sector by pooling small sums of money from multitude of individual investors for directly investing in infrastructure so as to return a portion of the income to unit holders of InvITs, who pooled in the money.
- InvITs are regulated by Securities and Exchange Board of India

- The **Twelfth Five Year Plan** (2012-2017) projected an investment of Rs 55.75 trillion in infrastructure during 2012-17, more than double that in the Eleventh Five Year Plan.
  - India's banking sector is under pressure as banks, weighed down by bad loans and weak profitability, are reaching their exposure limits in infrastructure lending.

**Advantages**

Monetization of infrastructure assets will,

- Strengthen the capital position of PSBs so that they are well placed to fund new credit growth opportunities
- Improve fund flow to the infrastructure sector by securitizing infrastructure assets, thus enhancing their access to institutional investors such as pension funds, insurance funds and mutual funds.
- Funds generated can be used to set up Greenfield projects
- It will make up for the lack of private investment.

## 3.4. UNEMPLOYMENT ALLOWANCE

**Why in news?**

The Andhra Pradesh government has announced **Mukhya Mantri Yuva Nestam scheme** to provide unemployment allowance of Rs 1000 per month to the unemployed youth (between 22-35 years of age) through DBT using Aadhar.

**Unemployment in India**

- **ILO report "World Employment and Social Outlook Trends - 2018":** The number of unemployed persons in India is expected to rise from 18.3 million in 2017 to 18.6 million in 2018 and 18.9 million by 2019. At the same time, unemployment rate is expected to remain static at 3.5 per cent.
- World Bank in its comprehensive report on India's economy opines that India needs to create a lot of salaried jobs (formal jobs) to meet the working population demands and step up its growth to a middle-income country.
- About 65 percent of the population in the country has an average age of less than 35 years. A large section of unemployed within this can become a demographic burden for India.

**The case of Unemployment allowance in India**

- Social security, social insurance, employment and unemployment comes within **concurrent list**. Therefore, both Centre and States can make laws over it.
- **MGNREGA** is the only law in India that guarantees 100 days of employment to all in rural areas.
- However, several states like Andhra Pradesh, Kerala, Uttar Pradesh, Himachal Pradesh, Puducherry, etc. have started to provide unemployment allowances to their youths based on degrees possessed by them.
- **Universal Basic income** irrespective of employment status has also been proposed as an idea.

**Justification for Unemployment allowance**

- A **safety net** will be available to youth during times of unemployment and they can hold on to get better jobs.

- According to Keynesian concepts, when the economy falls into recession it needs increased consumer spending, which is provided by a surge in benefits to the unemployed. This government spending creates a large multiplier effect on the economy as it boosts aggregate demand.
- It will give purchasing power to the people who are likely to spend it locally, helping local business which will further help in creation of jobs and more taxable income.

**Criticism against Unemployment allowance**

- It adds to the **fiscal deficit of the government**.
- Jobless insurance is a subsidy and **an incentive to stay unemployed.** Various economists have argued that generous or lengthy jobless benefits artificially inflate the unemployment rate.
- It **penalizes workers/employed people**.
- The Unemployment allowance **raises the cost of hiring**.
- **Suppress Personal Savings**: Unemployment is one of the major reasons because of which people save. This saving is also essential in economic growth when channeled into capital investment. It raises the productivity of economy and ultimately boosts wages. Since Unemployment allowance gives little incentive to save, it hurts economy in the long run.
- **Waste, Fraud, and Administrative Costs:** A large amount of public money is also wasted because of bureaucratic costs involved in devolution and administration of such allowances. Higher taxes eventually leads to tax evasion and other frauds.

**Way-Forward**

There are three demographic groups in urgent need of jobs i.e. a growing number of better educated youth; uneducated agricultural workers who wish to leave agricultural distress behind; and young women who are better educated than before. Following steps can be taken to create job for them:

- A better industrial and trade policy is required. Steep fall in tariffs after 1990s and inverted duty structures (higher duty on intermediate goods compared to finished products) have damaged MSMEs which have huge potential of job creation.
- Special packages should be provided to labour-intensive industries such as food processing, leather and footwear, wood manufacturers and furniture, textiles and apparel and garments to create jobs.
- Urban development can be aligned with manufacturing clusters to create jobs. Infrastructure investment (like AMRUT) by the government always creates many jobs.
- An engagement between the Urban Development and MSME Ministries can ensure that infrastructure is being developed in towns where MSMEs clusters are more. It will attract more investment to industrial clusters, which is where most non-agricultural jobs are.
- Cluster based skilling programs in areas/sectors where employment opportunities are more. Appropriate public investments in health, education, police and judiciary can create many government jobs.
- Schools need to be revitalised. Vocational courses and scientific education must be included in school curriculum at secondary and higher secondary level to give a broader view to students about career prospects.

## 3.5. UPI 2.0 LAUNCHED

**Why in news?**

Recently, National Payment Corporation of India (NPCI) has upgraded the Unified Payment Interface (UPI) with enhanced features.

**New features in UPI 2.0**

- **Linking of overdraft account** – Apart from the savings and current accounts, the UPI users can now link their overdraft account to it and all the facilities and benefits of overdraft account would be made available to the users.

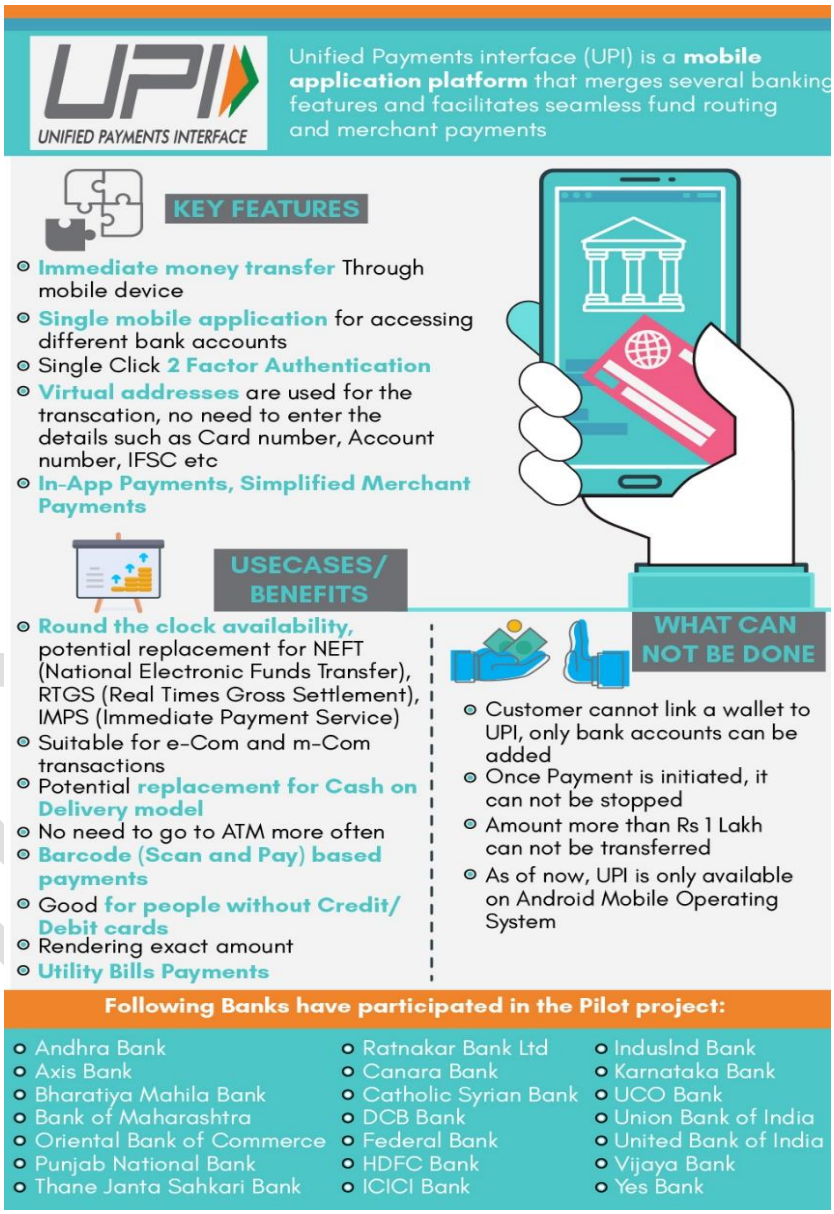
**About NPCI**

- It is an initiative of Reserve Bank of India (RBI) and Indian Banks' Association (IBA) under the provisions of the Payment and Settlement Systems Act, 2007
- It is the umbrella organization for all retail payments and settlement systems in the country.
- It also manages the UPI platform
- It links all the ATMs in India

- **One-time Mandate (account blocking)** – It allows customers or merchants to pre-authorize a transaction and pay at a later date. It would also ensure that the customers do not miss the payments.
- **Invoice in the inbox** – It allows the users to check the invoice sent by merchant in their own inbox prior to making the payments, thus allowing the customers to check the credentials beforehand.
- **Security Layer in QR** – The app allows the users to scan the QR code and check the authenticity of the merchants through notification to the user to ascertain the information.
- **Increased Transaction Limit** – The pre-existing transaction limit (1 lakh daily) has been raised to 2 lakh daily.

**Challenges**

- Even though the **transaction limit** has been raised to 2 lakh but certain banks still have limits much lower than 1 lakh while individual app such as BHIM, Whatsapp etc. have even lower limits.
- There is also **lack of initiatives from banks for penetration of QR Codes** for UPI whereas wallets have aggressively placed their stickers.
- The invoice in the inbox may have a **deeper security risk** as it may be accessible to anyone with the link which could lead to increased and unnecessary data harvesting.
- The overdraft feature of the UPI 2.0 may also lead to **over-spending** leading to banks charging the account holders.
- UPI 2.0 also doesn't have a **grievance redressal mechanism** that would ensure refund of failed transactions in a reasonable time period.
- The 'standing instruction' feature that would allow **recurring payments** from the user's bank account towards loan payment or bill payment after a specific interval, enabled by a one-time digital mandate need to be included to tap Rs 9 lakh crore worth of bill payments market which is still dominated by cash




## 3.6. PROPOSAL FOR CITY-LEVEL GDP

**Why in News?**

Recently, Ministry of Housing and Urban Affairs (MoHUA) commissioned The Economist Intelligence Unit (EIU) to evaluate methodologies for calculating **city-level gross domestic product (GDP)**, and to assess their applicability to India.

**Various Approaches used in calculating City level GDP**

- **"Top-down" approaches:** These are essentially used in city-to-state/region or city-to-country ratios to estimate city-level GDP, using existing national or state-level GDPs. Some of these estimates are for specific regions or metropolitan areas, although the concept remains valid for the smaller city unit. For instance, it uses population data to estimate output generated in a specific region.

- **"Bottom-up" approaches:** These mirror the SNA 2008 but are implemented at the city level, necessitating the use of city-level geographic markers during the data collection phase (for example, tagging census data or enterprise returns at the city level). These are rarely adopted due to the extremely high data requirements. For instance, based on the income approach to calculating GDP essentially adds up income generated through the production of goods and services.

The report has recommended top-down approach for calculating City Level GDP.

**Gross Domestic Product (GDP) and how it's calculated:**

- **GDP:** The GDP of a country provides a measure of the monetary value of all the final goods and services produced within the country in a specific year.
- There are 3 theoretical ways of calculating GDP, which include:
  - **Expenditure Approach:** The total spending on all final goods and services (Consumption goods and services (C) + Gross Investments (I) + Government Purchases (G) + (Exports (X) - Imports (M)) GDP = C + I + G + (X-M). This method is the most commonly used representation of the GDP.
  - **Income Approach:** This approach aims at adding up the incomes received by all the factors of production. Here, GDP=W (wages) + P (Profits) + R (Rents) + CP (Capital Gains)
  - **Value Added Approach:** In this approach, the value/price of final goods and services (including financial goods and services) are added up and the value of the intermediate goods is subtracted.
- Indian GDP is measured by using **gross value added (GVA) at market price** i.e. all final finished goods and services produced domestically in volume terms multiplied by their market prices give the value of total output.

**Significance of the city level GDP**

- **Rapid growth of urban sector in India:** Urban areas are considered as engine of economic growth for India with the sector contributing more than 60% of India's GDP in 2011 and are likely to contribute around 75% by 2020.
- **Wise fiscal decisions by municipal bodies and investors**: It would ensure better decisions on needed infrastructure & investment and leveraging their economic strength to raise funds to finance their needs.
- **Provide vital indicators for Urban development:** It would help in formulating the economic indicators needed to ensure improved quality of life, job creation and sustainability, which are also the three main components of Smart City mission.
- **Would highlight Indian cities at global level:** According to Global Metro Monitor Report, 2018 by Brookings Institution, several Indian cities rank in the 300 global cities with the fastest GDP growth rates, with GDP of Hyderabad growing at 8.7% followed by Surat at 7.9% which are comparable to the fastest growing Chinese cities.

**About System of National Accounts 2008 (SNA 2008)**

- The SNA 2008 is the latest version of the international statistical standard for the national accounts, adopted by the United Nations Statistical Commission (UNSC).
- The aim of SNA is to provide an integrated, complete system of accounts enabling international comparisons of all significant economic activity. However, adherence to it is entirely voluntary, and cannot be rigidly enforced.

**Challenges in city level GDP calculations**

- **Complex exercise:** Calculating city level GDP is more of data intensive exercise and much of the required data is not tracked at the city level, such as inter-city trade, whereas, data on country level GDP is readily available and is codified based on the System of National Accounts (latest version of 2008).
- **Current data collection focus on state level estimates:** In India, MoSPI calculates national GDP and sets the methodology for estimating GDP at the state level. Sampling and data collection is thus currently focused on state level estimates.
- **Requires clear definition of city boundaries:** As GDP is defined as the output generated in a specific area within a specific time, a clear definition of city boundaries is mandatory.

## 3.7. UNCONVENTIONAL HYDROCARBONS

**Why in news?**

Recently, Union Cabinet approved the policy to permit exploration and exploitation of unconventional hydrocarbons such as **Shale oil/ gas, Coal Bed Methane (CBM)**, etc. under the existing Production Sharing Contracts (PSCs), CBM contract and Nomination fields.

**Background**

- Existing contractual regime of PSCs (pre Hydrocarbon Exploration and Licensing Policy or HELP) did not allow contractors to explore and exploit CBM or other unconventional Hydrocarbons in already allotted/ licensed/ leased areas while CBM contractors were not allowed to exploit any other hydrocarbon except CBM.
- Acreages held at present by various contractors in PSCs (72,027 Sq Km) and CBM blocks (5269 Sq Km) and National Oil Companies (NOCs) in nomination regime constitute a significant part of India's sedimentary basin.
- India currently has around 100 – 200 Trillion Cubic Feet (TCF) of shale gas reserves in five sedimentary basins and there is a strong possibility of shale reserves in basins such as Cambay, Krishna- Godavari (KG), Cauvery, etc where mature organic rich shale exist. CBM reserves are found in Coal bearing areas in 12 states including Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Assam, Odisha, Rajasthan, Tamil Nadu, Telangana and West Bengal.

**Hydrocarbons Vision – 2025**

The Hydrocarbons Vision-2025, presented in the year 2000, laid down the framework which would guide the policies relating to the hydrocarbons sector for the next 25 years. It includes:

- To assure energy security by achieving self-reliance through increased indigenous production and investment in equity oil abroad.
- To enhance quality of life by progressively improving product standards to ensure a cleaner and greener India.
- To develop hydrocarbon sector as a globally competitive industry which could be benchmarked against the best in the world through technology upgradation and capacity building in all facets of the industry.
- To have a free market and promote healthy competition among players and improve the customer service.
- To ensure oil security for the country keeping in view strategic and defence considerations.

**Benefits of the move**

- It will encourage the existing contractors in the licensed/ leased area to realize the full potential of Contract Areas and unlock the prospective unconventional hydrocarbons in their existing acreages.
- **New investment in Exploration and Production (E&P) activities:** it will increase the chances of finding and producing new hydrocarbon which will help to meet energy needs of the economy and hence moving towards energy security as envisaged in Hydrocarbons Vision 2025 (box).
- Exploration and exploitation of additional Hydrocarbon resources will give new impetus to economic activities, additional employment generation and will benefit various sections of society.
- It will lead to induction of new, innovative and cutting edge technology and forging new technological collaborations to exploit unconventional hydrocarbons.
- There will be a complete shift from **'One Hydrocarbon Resource Type'** to **'Uniform Licensing Policy'** which is presently applicable in Hydrocarbon Exploration and Licensing Policy (HELP) and Discovered Small Field (DSF) Policy.

Some important **specific initiatives taken to enhance the domestic natural gas production**, expand the gas pipelines and secondary infrastructure and develop the gas consuming markets include:

- **100% Foreign Direct Investment (FDI)** in many segments of the hydrocarbon sector.
- Linkage of gas prices to the market/important hub prices under the **New Domestic Natural Gas Price Guidelines of 2014.**
- **Marketing and pricing freedom for new gas production** from Deepwater, Ultra Deepwater and High Pressure-High Temperature areas, subject to certain conditions. Also, Marketing and pricing freedom for gas produced from Coal Bed Methane (CBM) fields to incentivize CBM operations in the country.
- Development of 2,650 km-long Jagdishpur-Haldia & Bokaro-Dhamra natural gas pipeline to ensure supply of natural gas to eastern India.
- Reduction of basic customs duty on LNG from 5% to 2.5% in the 2017 budget to boost LNG demand in industrial and commercial sectors, especially power, petrochemical, fertilizer and CGD, and also help in reviving stranded capacity of power and fertilizers plants.
- **Gas pooling mechanism** for fertilizer sector to encourage utilisation of fertilizer units in the country.
- Priority for allocation of domestic gas accorded to Piped Natural Gas (PNG)/Compressed Natural Gas (CNG) segments to meet 100% of their demand and faster roll out of PNG connections and CNG stations to promote the use of natural gas in the transport sector, households and small industries.

**Other steps taken towards enhancing the production of unconventional hydrocarbons:**

- **Oil ministry recently included shale under the definition of petroleum:** Earlier, under the **Petroleum and Natural Gas Rules, 1959**, Petroleum included naturally occurring hydrocarbons, whether in the form of natural gas or in a liquid, viscous or solid form, or a mixture of these, but did not include coal, lignite, and helium occurring in association with petroleum or coal or shale.
- **Hydrocarbon Exploration and Licensing Policy (HELP)** was introduced in 2016 which has the four main facets:
  - uniform license for exploration and production of all forms of hydrocarbon,
  - an open acreage policy,
  - easy to administer revenue sharing model and
  - marketing and pricing freedom for the crude oil and natural gas produced.
- In 2015, the Cabinet had approved the **Marginal Field Policy (MFP)/ DSF policy** with the objective to bring marginal fields, that could not be monetized for years due to various reasons such as isolated locations, small size, prohibitive development costs, technological constraints, unfavourable fiscal regime, to the production at the earliest so as to augment the domestic production of oil and gas.
- **Open Acreage Licensing Policy (OALP):** Setting up of **National Data Repository**. OALP enables upstream companies to bid for any oil and gas block without waiting for the announcement of bidding.
- **Shift towards a gas based economy:** The Government wants to make India a gas-based economy 'by boosting domestic production and buying cheap LNG'. India has set a target to raise the share of gas in its primary energy mix to 15% by 2022. GoI has adopted a systematic approach to focus on all aspects of the gas sector:
  - Development of gas sources either through domestic gas exploration & production (E&P) activities or through building up facilities to import natural gas in the form of LNG
  - Development of adequate gas pipeline infrastructure including nationwide gas grid and Secondary distribution network
  - Development of gas consuming markets including fertilizer, power, transport and industries, etc.

## 3.8. SAFETY, SECURITY AND ENVIRONMENTAL ASPECTS IN PETROLEUM SECTOR

**Why In news?**

Recently, Standing Committee on Petroleum and Natural Gas submitted its report on 'Safety, Security and Environmental Aspects in Petroleum Sector'

**Introduction**

- Efficient, reliable and competitively priced energy supplies are prerequisites for accelerating economic growth. Petroleum industry handles highly inflammable hydrocarbons, and operates processes under high temperature and pressure.
- Industry has a significant **influence on environmental pollution** through exploration and production operations, oil spillage, and refining operations. Therefore, the safety and security and environment protection in petroleum and natural gas industry is of paramount and vital importance and its operation in a safe mode is necessary both for the employees and the society at large.
- The **major cases of accidents across the oil and gas industry** occur due to: (i) not following the standard operating procedures (SOPs), (ii) violation of work permit system, and (iii) knowledge gap.

**Issues**

- **Multiple Regulating Body**: Various statutory authorities are involved in enforcing safety in the petroleum and natural gas industry.
  - In the oil exploration and production segments, the DIRECTORATE GENERAL OF MINES SAFETY (Mo

**OISD (Oil Industry Safety Directorate):**

- It's a technical directorate under the **Ministry of Petroleum and Natural Gas** that formulates and coordinates the implementation of a series of self-regulatory measures aimed at enhancing the safety in the oil & gas industry in India.

**Petroleum and Explosives Safety Organisation (PESO)**

- It is the apex department to control and administer manufacture, storage, transport and handling of explosives, petroleum, compressed gases and other hazardous substances in India.
- It functions under the Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry. HQ at Nagpur

Labour and Employment) and OISD (MoPNG) regulate safety.
    - In the oil processing and distribution segments, the PESO and PNGRB, which are under the Ministries of Commerce and Industry and MoPNG respectively, are enforcing safety. PESO regulates 97% of the premises, followed by 2% by DGMS, and 1% by OISD.
- **Incidents of Oil Spill:** Oil spill is a major problem in hydrocarbon sector which adversely affects the environment.
- **Poorly trained worker**: Accidents were also caused due to poorly trained workers. It can be resolved by imparting regular training and refresher training of all the workers including contract workers and security personnel.
- **Pilferage from oil pipelines** by anti-social elements poses a major hazard risk.
- **Transportation of Petroleum Products**: Accidents took place that involved trucks transporting petroleum products. To prevent such incident, it should be mandatory to install **GPS along with Vehicle Tracking System (VTS**) in the tank trucks.

**Way Forward**

- **Formation of a Unified Safety Board for Overcoming Regulatory challenges**: Committee recommended that PESO may be empowered to work as a single framework for regulation of safety in the entire hydrocarbons sector.
- **Environmental Friendly**: Developing Accountability mechanism to oversee the steps taken by refineries in mitigating environmental pollution using the latest and cleaner technology, recovery of by products and resource conservation and effluent treatment facilities.
- **Safety and Security audit** should be carried out at periodic intervals to update and upgrade the security systems in all the oil and gas installations.
- **Use of technology**: Geo-physical Mapping of Potential Disasters for advance planning to minimise damage and to deal with accidents efficiently and effectively.

## 3.9. DISTRICT MINERAL FOUNDATION (DMF)

**Why in News?**

Recently, Centre for Science and Environment (CSE) released the District Mineral Foundation (DMF) Status Report, 2018, which highlighted several shortcomings in the implementation of DMF scheme.

**Background**

- DMF was instituted in March 2015 through an amendment under the **Mines and Minerals (Development and Regulation) Act, 1957**.
- **Section 9(B)(1),** of the **MMDR (Amendment) Act,2015** provides for setting up of DMF as a non-profit Trust in every mining district and stipulates miners to pay a part of their royalty for the well being of mining affected people so that they too can benefit from natural resources in their areas.

**Significance behind establishing DMF**

- **Aimed to address the ironic inequality of India's mining affected districts** where the richest lands are inhabited by some of the poorest and most deprived persons and to ensure socio- economic and environmental justice for them by maximizing the welfare and benefit of the mining-affected people and areas in a targeted manner.
- **Recognizes the right of the people to benefit from natural resources**: It is a people-centric vision of natural resource governance where their right to benefit has been put at the forefront.
- **Has defined objectives, specific beneficiaries and geographies (directly and indirectly mining-affected areas) and certain 'high priority' issues to focus on for intervention:** The high priority issues, towards which at least 60 per cent of the DMF budget should be used, include drinking water supply, sanitation, healthcare, education, welfare of women and children, welfare of aged and disabled, skill development, environment preservation, and pollution control measures. Some states have also specified other sectors such as agriculture, affordable housing.

- **DMF's objective and functioning is guided by three fundamental laws of the land**: these include the Constitutional provisions as related to the **Fifth and Sixth Schedules** for governing tribal areas, the Panchayats (Extension to Scheduled Areas) Act (**PESA**), 1996, and the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of **Forest Rights**) Act, 2006 (the FRA).

**Issues with the DMF operation**

- **No DMF trust has identified its beneficiaries:** The beneficiaries of the mining affected areas have not been identified by any of the trusts.
- **Excessive control by State Governments:** There was too much state government intervention in deciding DMF fund utilization even though DMF rules and Central Government's flagship scheme- **Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY)** categorically emphasize the role of Gram Sabha.
    - Telangana in June 2018 even amended its DMF rules to withdraw participation of Gram Sabha from the DMF body.
    - The Chhattisgarh DMF Rules has created a "Settlor" - the Secretary of Mines - who has over-riding powers to include or scrap any project.
    - In seven out of twelve states reviewed under the study, DMF body was dominated by Government officials and political executives- MLAs, MPs or in some cases elected Panchayat members. However, there was no representation of mining affected people.
- **Misplaced allocations of DMF resources:** This results in by-passing key issue areas of the affected districts such as healthcare or nutrition.
    - For instance, in Odisha's Sundergarh district where under five mortality rates in rural areas are very high and nearly 50% children below five have stunted growth, only Rs. 3 Crore is provided for Child development out of district's Rs. 745 Crore sanctions.
    - Similarly, spending is diverted to various construction activities in Urban areas such as 46% of total DMF sanctions in Chhattisgarh's Korba district is used for works in urban areas which include education hub, roads, urban sanitation works, multilevel parking lots, bus stops etc.
    - In Odisha's Jharsuguda, 96% of health sector sanctions are being spent to construct a medical college in Keonjhar town.
- **Lack of planning and ad-hoc investments** are one of the biggest drawbacks in most districts, resulting in many cases districts leaving out people and areas worst hit by mining from DMF fund allocation, for instance, in Jharkhand's Dhanbad district's Jharia coal mine region, which is one of the worst affected areas in the district, no fund is allocated at all from DMF sanctions.
- **Absence of proper administrative setup:** except for a handful of three out of 50 districts studied, no DMF has setup an office for planning and coordination, engaging concerned officials and experts. DMFs are operating in an ad hoc manner with intermittent meetings of DMF bodies where decisions on sanctions are being made. Some districts (as in Odisha and Jharkhand) have engaged private consultants to oversee DMF implementation.
- **Indifferent attitude of the state governments:** Governments in 11 states have issued notifications establishing DMF as a Trust, but the notifications do not essentially elaborate on the composition and functions of the Trust or the rights of the beneficiaries. Gujarat is an exception in every aspect as it does not recognize DMF as a Trust and establishes it as a 'society'.
- **Lack of transparency and accountability:** Public disclosure of information is the key to ensure accountability, however, except for Odisha and Chhattisgarh, no state has a proper DMF website. Also **no audits** have

**About Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY)**

- PMKKKY is a programme launched in September 2015 to provide for the welfare of areas and people directly or indirectly affected by mining related operations. PMKKKY is implemented by the District Mineral Foundations (DMFs) of the respective districts using the funds accruing to the DMF from miners.
- The overall objectives of PMKKKY scheme are:
    - to implement various developmental and welfare projects/programs in mining affected areas. These projects/programs will be complementing the existing ongoing schemes/projects of State and Central Government;
    - to minimize/mitigate the adverse impacts, during and after mining, on the environment, health and socio-economics of people in mining districts; and
    - to ensure long-term sustainable livelihoods for the affected people in mining areas.

happened for most DMFs. Even for the few districts where it has happened, such as in Chhattisgarh and Odisha, so far financial audits have only happened once and no performance evaluation or social audit essential for public schemes has ever been undertaken.

**Way Forward**

- If developed and implemented well, DMFs not only have a huge potential for improving the lives and livelihoods of some of the poorest communities but they could also be a model for inclusive governance.
- State governments must provide districts the flexibility to plan and invest on the needs of the local communities. The intended autonomy of DMF Trusts should be maintained.
- A systematic and bottom-up planning approach must be followed to make investments effective. The potential can also be improved by considering convergence with other programmes of the Central and state governments once priority issues are determined.
- Districts must identify DMF beneficiaries; there cannot be a Trust without beneficiaries. This will also help in targeted investments such as for addressing women and child development issues.
- Gram Sabhas (and ward members where applicable) should have a representation in the DMF body. Not following this is in contravention to the spirit of the DMF law as well as the state DMF Rules.
- For efficiency of operations, all DMFs must have an office comprising of officials and experts. Independent organizations/planning experts can be roped in from time to time for effective planning.
- Public disclosure of information is key to DMFs' transparency of operation. District-specific DMF-related information must be made available through a website. To ensure access, information should be shared by using panchayat-level platforms.

## 3.10. WORLD'S FIRST BLOCKCHAIN BOND

**Why in News?**

The **World Bank** has launched the world's first public bond created and managed using only blockchain in order to test how the technology might improve current bond sales practices.

**More About News**

- The project is called '**BONDI'** (Blockchain Operated New Debt Instrument), which is also reference to the Bondi Beach in Sydney.
- **Commonwealth Bank of Australia (CBA)** has been mandated by the World Bank to be the sole arranger of the bond.
- It is a **Kangaroo bond** (foreign bonds issued in Australia in local currency).

**Benefits of Blockchain Bonds**

- The launch of the blockchain bond is an initial step in moving bond sales away from manual processes towards **automation**.
- Blockchain technology could help in cutting **down bond settlement time** "from T+2 days currently to T+2 minutes".
- The technology has potential to deliver substantial **cost savings** as intermediary activities can be eventually reduced or removed.
- It also improves the **reputation of crypto-technologies** which are currently viewed suspiciously.

***For more details on blockchain technology, kindly refer Vision IAS July 2018 current affairs***

## 3.11. BIDDER INFORMATION MANAGEMENT SYSTEM (BIMS) AND BHOOMI RASHI

**Why in news?**

The Ministry for Road Transport & Highways, Ministry for Shipping and Ministry for Water Resources, River Development and Ganga Rejuvenation had launched two IT initiatives – BIMS & Bhoomi Rashi – with aim to expedite pre-construction processes relating to bidding and land acquisition respectively.

**Bidder Information Management System (BIMS)**

- The portal will work as a **data base of information about bidders**, covering basic details, civil works experience, cash accruals and network, annual turnover etc. BIMS will be used by all the project implementation agencies of the Ministry.
- It is **aimed at streamlining the process of pre-qualification** of bidders for Engineering Procurement Construction Mode of contracts for National Highway works with enhanced transparency and objectivity.
- The **bidders would be responsible** for ensuring that their latest details are available on the BIMS portal.
- The portal will be operated in conjunction with the CPPP portal for invitation of bids for civil works for EPC mode.
- It is estimated that BIMS portal will significantly reduce the procurement time for projects through an objective and transparent online evaluation system thereby leading to accelerated project implementation.

**Engineering, Procurement, Construction contract (EPC)**

- It is a prominent form of contracting agreement in the construction industry.
- The engineering and construction contractor will carry out the detailed engineering design of the project.
- Then they procure all the equipment and materials necessary.
- And, then construct to deliver a functioning facility or asset to their clients.

**Bhoomi Rashi**

- It is a portal that has been developed in collaboration with National Informatics Centre (NIC), comprising the entire revenue data of the country. The entire process flow, from submission of draft notification by the State Government to its approval by the Ministry is online.
- The portal had been created for expediting the **process of publication of notifications**.
- It has been **integrated with Public Financial Management System (PFMS)**. With this payment of Compensation by the Ministry to the beneficiaries will be just-in-time, and without any parking of funds.
- It will act as one of the key functionalities to facilitate payment related to compensation for land acquisition to all the beneficiaries directly through the Bhoomi Rashi system.

- **PFMS** is a web-based online software application developed and implemented by the Office of Controller General of Accounts (CGA). to facilitate sound public financial management system for Government of India (GoI).
- It provides various stakeholders with a real time, reliable and meaningful management information system and an effective decision support system, as part of the Digital India initiative of GoI.
- It would help in tracking and monitoring of flow of funds to the implementing agencies.

## 3.12. WATER AERODROME

**Why in news?**

The Ministry of Civil Aviation has approved a proposal to set up water aerodromes in the country.

**Details**

- **Water aerodrome is a defined area on water**, including any buildings, installations and equipment, intended to be used either wholly or in part for the arrival, departure and movement of aircraft.
- **The Airports Authority of India has identified 5 states** i.e. Odisha, Gujarat, Assam, Maharashtra and Andhra Pradesh where water aerodromes would be developed.
- They are proposed to be developed **near locations of tourist and religious importance**.
- In its first phase, water aerodrome will be established at **Chilika Lake in Odisha**, **Sardar Sarovar Dam and Sabarmati River Front in Gujarat**.
- The Directorate General of Civil Aviation had earlier released licensing norms for the aerodromes, under which:
  - An aerodrome cannot be used for scheduled air transport services unless there is a license.

**About Chilika Lake**

- It is Asia's **largest brackish water lagoon** located in coastal Odisha.
- It is separated from the Bay of Bengal by a 60 km long narrow strip of **marshy islands and sand-flats.**
- Some of the prominent islands like **Nalabana, Kalijal, Somolo, Honeymoon, Break-fast, Birds and Rajahansa** inhabited by fishermen families, are popular tourist destinations.
- Because of its rich bio-diversity and socio-economic importance, **Chilika** was designated as a **Ramsar** site in 1981 to afford better protection

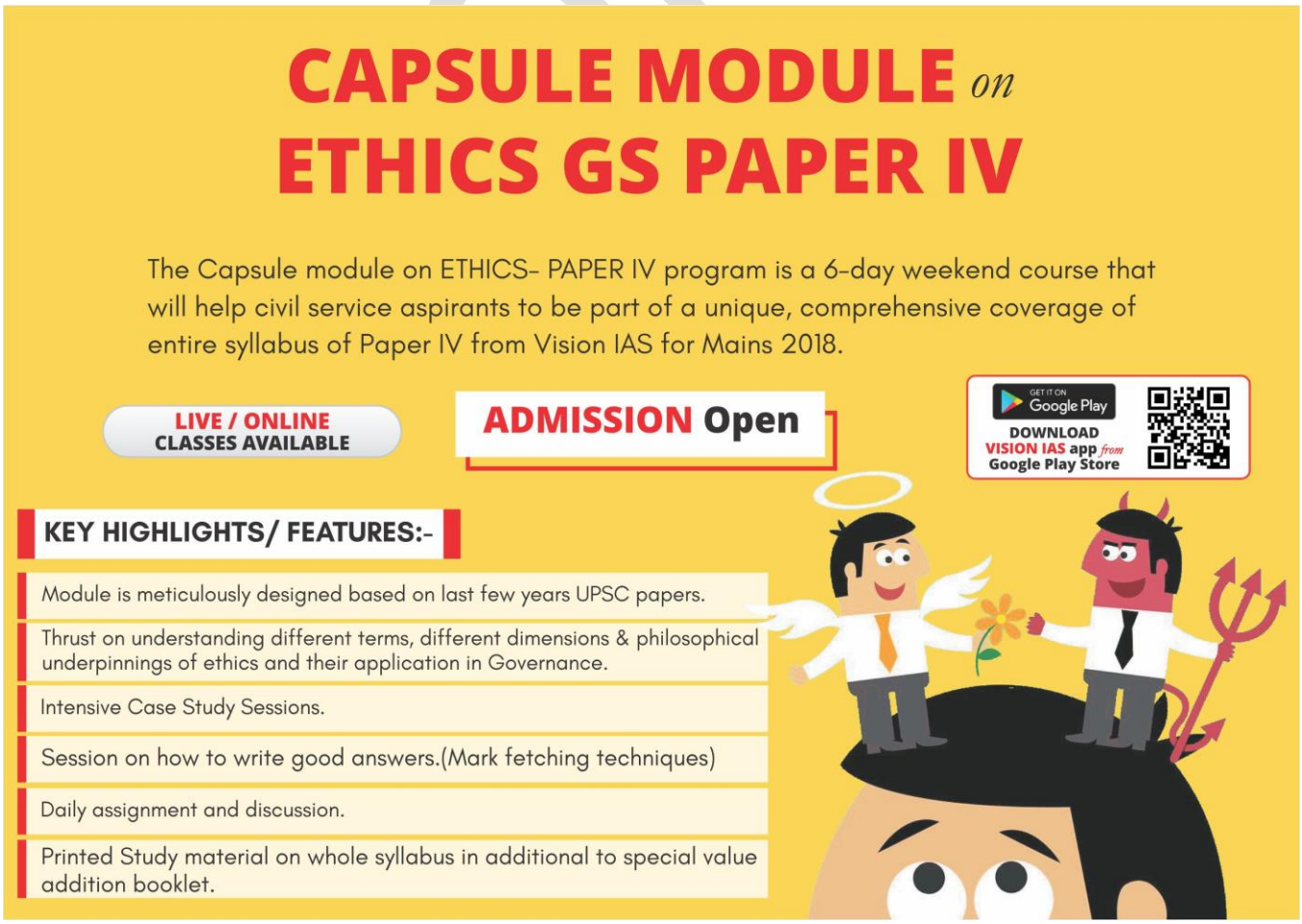
**Kalijai Temple:** It is located on an island in the Chilika Lake, where Goddess Kalijai is worshipped. The celebration of **Makar Sankranti** here attracts pilgrims as well as tourists.

- The formal application for setting up a water aerodrome has to be submitted at least 90 days before date of intended operations.
- An entity seeking to set up a water aerodrome has to take approvals from various authorities, including the ministries of Defence, Home, Environment and Forests, and Shipping.
- A water aerodrome license would be valid for two years.

- **Benefits of such water aerodromes:**
  - Such aircraft are expected to take people across water faster and more safely than local boats.
  - This would boost tourism and hence economic opportunities in the area.
  - In later phases, government may also consider operations of seaplanes under regional connectivity scheme UDAN.
- However, despite the economic benefits the aerodrome is being opposed in Odisha due to its possible adverse impact on the biodiversity.

**Reasons of resistance from Odisha**

- **Safety of birds and humans:** For six months between October and March, Chilika lake turns into a **temporary habitat for lakhs of migratory and residential birds.** If an aircraft flies at low height, the birds can get hit. While the bird population will be in danger, safety of passengers of amphibious aircraft will also be jeopardized.
- **Noise pollution:** generated by thousands of motorized boats has already taken a toll on the endangered Irrawaddy dolphins in the lake. The introduction of amphibious aircraft will further worsen the situation.
- **Economic impact:** There would be direct impact on fish and other marine biodiversity which would affect two lakh fishermen families in the region.
- **Existing regulation:** The movement of boats are restricted in many areas of Chilika, including the Nalabana bird sanctuary. In this light the operation of an aerodrome will be difficult to justify.

# 4. SECURITY

## 4.1. MAOIST ORGANIZATIONS IN TOWNS AND CITIES

**Why in News?**

Recent arrests of five people with alleged Maoist links for their role in Bhima – Koregaon incident has once again brought the debate on the concept of "Urban Naxalism".

**Background**

- **1967:** Naxalite movement started by Charu Majumdar, Kanu Sanyal and Jangal Santhal in Naxalbari area of West Bengal.
- **2004: CPI (Maoist)** was formed with the merger of CPI (Marxist-Leninist) People's War Group (PWG) and the Maoist Communist Centre of India. It professed a violent ideological line to overthrow the democratically elected Parliamentary form of Government in India through a three pronged strategy that include:
    - **Using its People's Liberation Guerilla Army (PLGA)**, Maoists aim to capture territories in the country side and gradually encircle the urban centre.
    - **Use of Mass Organizations, also known as 'Front Organizations' mainly in urban areas** to mobilize certain targeted sections of the urban population, recruit professional revolutionaries, raise funds for insurgency, create urban shelters for underground cadres.
    - These organizations are generally manned by ideologues that include academicians and activists, mostly operating under the garb of Human Rights NGOs that are organically linked to CPI (Maoist) party structure but maintain separate identities in an attempt to avoid legal liability.
    - Such organizations are also adept at using the legal processes of the Indian State to undermine and emasculate enforcement action by the security forces and also attempt to malign the State institutions through a concerted and systematic propaganda and disinformation campaigns to further their cause. These ideologues have kept the Maoist movement alive and are in many ways more dangerous than the cadres of the PLGA.

      **Operational Structure of CPI (Maoist):** The Polit Bureau (PB), the think tank of the Maoist organization keeps in touch with the over-ground frontal organizations (operating in urban areas), operators and sympathizers and formulates long-term policy and strategy.
    - **To form a Rainbow Coalition of various insurgent groups:** so as to launch a united front attack against the existing state machinery.
- **Banned under Unlawful Activities (Prevention) Act, 1967:** CPI (Maoist) party and all its formation and front organizations have been listed as Terrorist organizations under the Unlawful Activities (Prevention) Act, 1967.

**About Urban Naxalism**

- **In 2004, a CPI (Maoist) document titled 'Urban Perspective: Our Work in Urban Areas' elaborated on Urban naxalism strategy:** with a major focus on gaining leadership and expertise from urban areas, it emphasized on mobilizing industrial workers and urban poor, establishing front organizations, building 'tactical united fronts' of likeminded organizations including the students, middle class employees, intellectuals, women, dalits and religious minorities and engaging in military tasks such as providing personnel, technologies, material and infrastructure along with infiltration of police.
- **Active front organizations in many Indian cities:** Intelligence report reveals that front organizations supporting 'Urban Naxalism' are active in a number of cities including Delhi, Mumbai, Kolkata, Chandigarh, Ranchi, Hyderabad, Visakhapatanam, Madurai, Thiruvananthpuram, Nagpur and Pune.

**Arrest of a person professing the ideology of a Maoist**

- Kerala High Court in 2015 had held that being a Maoist and having a political ideology of the Maoist is no crime unless the police form a reasonable opinion that his activities are unlawful.
- Only if the individual or organisation abhors and resorts to physical violence, the law agency can prevent or take action against the individual or organisation.

**Significance of Urban presence for Naxals**

- **Logistics Support:** The utility of having a presence in urban centres and operate there was best illustrated when police seized empty rocket shells and rocket

launchers in 2006, in Mahabubnagar district, Andhra Pradesh. This elaborates the network that Maoists had built to manufacture rocket parts and transport them to different parts of the country.

- **Tapping industrial workers:** penetrating the working class movement in important industries such as communication, oil and natural gas, coal, transport, power, defence production, etc is envisaged. The detection of Maoist activities in towns such as Surat, in Gujarat, earlier in 2006, and later on several other industrial belts, clearly reaffirms this.
- **Attracting students and youth:** The Urban Movement has attracted students towards the Maoist fold in various parts of the country. Security agencies believe that the front organizations have started vigorous movement in the education sector, to rope in students from several reputed colleges for their cause.
- **Urbanisation itself has some faultlines and the Maoists could well exploit these to their advantage:** The Maoists enjoy some degree of sympathy and support among the urban intellectuals and middle class, including students and teachers in schools, colleges and universities.
- **Rest and recuperations:** On many occasions important top-level leaders of the CPI (Maoist) have been arrested from cities and towns hiding under the garb of civil society.

**Way Forward**

- Ministry of Home Affairs suggests that the strategy to tackle Left-Wing Extremist (LWE) challenges must **include plans to tackle 'Urban Naxalism'**. State must initiate legal action against the Maoist front organizations.
- A **separate budget** should be provided to counter the growing Naxal footprint in cities.
- Initiating legal proceedings against the ideologues including academicians and activists often resulted in negative publicity for enforcement agencies due to effectiveness of the Maoist propaganda machinery. There is a need to address the issue through systematic, protracted and persistent efforts.

## 4.2. DEFENCE OFFSET FUND

**Why in news?**

Defence ministry is planning to set up an offset fund namely Defence Offset Fund (DOF).

**About DOF**

- It will be set up to fund promising defence start-ups
- It will be modelled on the successful **Electronics Development Fund (EDF).**
- In this fund, the **30 per cent contribution** would come from a **foreign vendor** in discharge of an offset obligation and rest would be raised from market.
- Contributions to the DOF will be eligible for a **multiplier of three**, which means that by contributing $100 million, a vendor would extinguish offset liabilities worth $300 million.
- To create the DOF corpus, the defence ministry is **amending the defence offsets guidelines** that are set out in the Defence Procurement Procedure of 2016.
- The proposed offset guidelines allow foreign arms vendors to discharge offsets — which amount to at least 30 per cent of the actual value of all contracts above Rs 20 billion.

**What are offsets?**

- Offsets are essentially benefits that a buyer gets from a seller — technology/capability that Indian industry gets from a foreign vendor selling equipment to India.
- The policy on offsets was first introduced as part of the **Defence Procurement Procedure (DPP) 2005**, and has undergone revisions since then.
- The main objective of the Defence Offset Policy is "to **leverage capital acquisitions** to develop Indian defence industry by fostering development of internationally competitive enterprises, augmenting capacity for research, design and development related to defence products and services, and encouraging development of synergistic sectors like civil aerospace and internal security".

**About EDF (Electronics Development Fund)**

- It is a "**Fund of Funds**" contributing 15 per cent of the value of professionally managed "Daughter Funds", required to raise the remaining 85 per cent from the market.
- **The funds choose and fund start-ups for developing technologies in electronics, Nano-electronics and information technology.**
- The MeitY nominated Canara Bank Venture Capital to select the Daughter Funds. These must be private- or government-run funds following SEBI rules.

- This fund can then be invested in following areas:
  - Indian defence related infrastructure
  - Sharing specified critical technologies
  - Equity investment in defence manufacturing companies
  - Investment in Sebi-regulated fund dedicated for development of start-ups and MSMEs of defence, aerospace and internal security-related enterprises in the country.

## 4.3. BRU DEAL

**Why in news?**

The Union Home Ministry has agreed to relax conditions laid down in the 'four-corner agreement' signed for repatriation of Bru migrants from Tripura to Mizoram.

**About BRU tribe**

- It is also known as **Riang and it is spread** across the northeastern states of Tripura, Assam, Manipur, and Mizoram..
- It is categorized as primitive tribal group.
- **They are the second largest tribe of Tripura after the Tripuri tribe.**
- The dance performed by Bru tribals after harvesting of shifting cultivation is **'Mai-nouhma'** dance.

**More on news**

- Bru tribe migrated from Mizoram to Tripura in 1997 due to ethnic violence in their home state.
- In July 2018, a "**four- corner agreement"** was signed with provisions such as a **one-time financial assistance of Rs 4 lakh** as **fixed deposit** in the name of the head of family only after 3 years of uninterrupted stay in Mizoram**, a house building assistance** of Rs 1.5 lakh in **three instalments** and **free ration for two years** and a monthly assistance of Rs 5,000 for each family.
- However, due to protest regarding these provisions certain revisions have been done based on the new demands such as:
  - Relaxation in the period of stay for **cash assistance of Rs 4 lakh** to two or even 1.5 years**.**
  - Allowing withdrawal of 90% of this 4 lakh as bank loan immediately after their return.
  - Rs 1.5 lakh house assistance in a single instalment or two.
  - Other measures include **Eklavya residential schools, land for Jhum cultivation, permanent residential and ST certificates, and a special development project**.
- Their demand of cluster village was however rejected.

## 4.4. EXERCISE SCO PEACE MISSION 2018

**Why in news?**

The SCO peace mission for 2018 will be conducted in Chebarkul, Chelyabinsk, Russia this year.

**About SCO**

- It is a **permanent intergovernmental international organisation** created in 2001.
- Its members include India, Pakistan Kazakhstan, China, Kyrgyztan, Russia, Tajikistan, and Uzbekistan.
- It was preceded by the Shanghai Five mechanism which did not include Uzbekistan, Pakistan and India.
- Its **main goals** include**:**
  - Strengthening mutual trust and neighbourliness among the member states;
  - Promoting their effective cooperation in politics, trade, the economy, research, technology and culture etc.;
  - Making joint efforts to maintain and ensure peace, security and stability in the region;
  - Moving towards the establishment of a democratic, fair and rational new international political and economic order.

**About the peace mission**

- Exercise Peace Mission 2018, the joint military exercise of Shanghai Cooperation Organisation (SCO) is **conducted biennially for SCO member states**.
- It provides an opportunity to the armed forces of SCO nations to train in **counter terrorism operations in urban scenario** in a multinational and joint environment.
- This is the **first time** India is participating in this peace mission post joining SCO.
- The exercise provided an opportunity for the armies of **India and Pakistan to operate together outside the United Nations** umbrella, under which they had operated in the past.

## 4.5. MAITREE EXERCISE 2018

**Why in News?**

Exercise Maitree, a joint military exercise between Indian Army and Royal Thai Army was recently conducted in Thailand.

**More**

- It is a platoon level exercise which comprises of infantry component.
- The exercise seek to enhance the skills in joint counter insurgency and counter terrorist operations in rural and urban scenario under UN mandate and seek to increase interoperability between both forces for joint operation.

## 4.6. BARAK-8 MISSILE

**Why in news?**

The Barak 8 missile defence system will be procured by the Israeli Navy to protect its economic zones and strategic facilities.

**About Barak 8 missile**

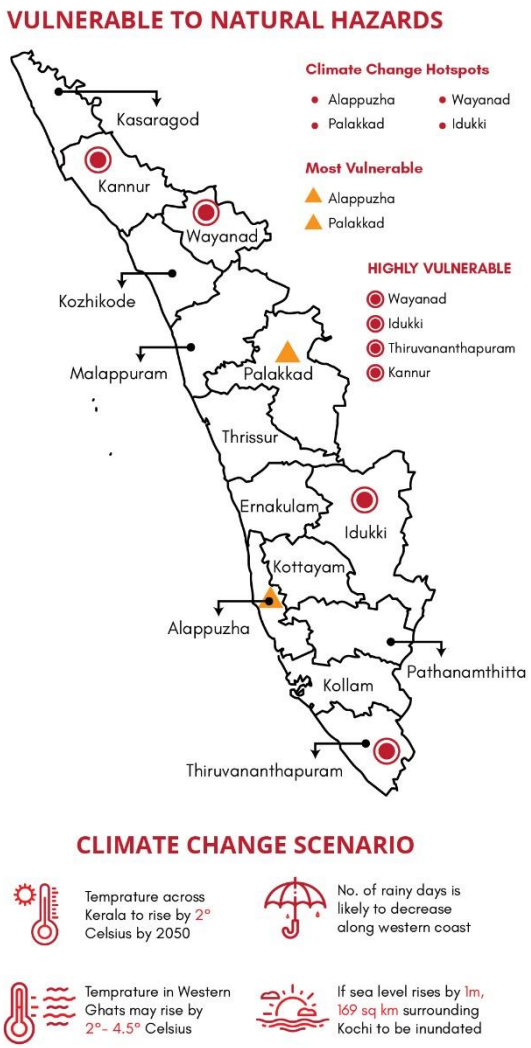
- Barak 8 (the Hebrew word for Lightning), jointly developed by **India and Israel,** is a **long-range surface-to-air missile (SAM).**
- It is designed to defend against any type of airborne threat including aircraft, helicopters, anti-ship missiles, and UAVs as well as cruise missiles and combat jets.
- Its main features include**:**
  - Capability to take down an **incoming missile as close as 500 meters** away;
  - Maximum speed **– Mach 2**
  - Operational range - 70 Km (which has been increased to **100 Km**)
  - Two-way data link, Active Radar Seeker Missile with **360-degree coverage** and flexible command and control system enabling **Simultaneous Engagements on multiple targets** in **all weather** conditions.

# 5. ENVIRONMENT

## 5.1. KERALA FLOOD

**Why in news?**

Recently, Kerala witnessed their worst flood since 1924, killing at least 480 people, displacing 780,000 and causing ₹ 50,000 crore worth of damage in State.




**Background**

- **India's Vulnerability to Floods:** 40 million hectares out of a geographical area of 3290 lakh hectares is prone to floods in country.
- **Impact of Climate Change:** Intensity of extremely wet spells and extremely dry spells during the South Asian monsoon season have been increasing since 1980.
- **Financial Drain**: Floods costs the country Rs. 8,12,500 crore between 1953 and 2011 and according to World Resources Institutes (WRI), by 2030, up to $154 billion of the country's gross domestic product could be exposed to flood risks each year, as climate change fosters more extreme weather events.
- **Comptroller and Auditor General (CAG) in June 2017** says the States have failed to conduct a scientific assessment of flood-prone areas and of the 349 dams surveyed, only 40 prepared detailed disaster management plans.
    - It also pointed out that **poor dam management** was responsible for India's floods, such as Bihar in 2016 and Surat in 2006. In the 2015 Chennai floods, which claimed 295 lives, violation of dam safety norms was a critical factor.

**Flood vulnerability in Kerala**

- **Rashtriya Barh Aayog (RBA)** had estimated 8.70 lakh hectares area as flood prone out of 38.90 lakh hectares of geographical area in Kerala.
- **Kerala State Action Plan on Climate Change (SAPCC)** in 2014 assessed that state is severely threatened by climate change (see infographic).
- **Central Water Commission (CWC),** India's only flood forecasting agency, does not have any flood forecasting system in Kerala.
- **Gadgil report on fragile ecosystem of Western Ghats (2011)**, had warned that illegal mining and deforestation had led to massive encroachment of river fronts in the state, and there was an urgent need for corrective action.
    - It also said that, unchecked quarrying and construction in ecologically sensitive areas, can cause disastrous floods due to premature siltation in many reservoirs in the Western Ghats.

**Reasons**

- **Incessant rainfall**: Kerala received 2,346.6 mm of rainfall against a normal of 1,649.5 mm since the beginning of June. The "active" phase of the monsoon is when the monsoon trough moves south of its normal position causing heavy and intense showers in the southern peninsula
- **Dam Mismanagement:** There was an instant release of water from dam due to heavy rain, as dam reservoirs were not emptied before the onset of rain, flooding the nearby regions at a much faster rate than expected.
    - Kerala government claimed that sudden releases of water from the Mullaperiyar dam (located in Kerala, but operated by Tamil Nadu) was a cause for the floods in the State.

- **Stone quarrying:** A recent study by the **Kerala Forest Research Institute** pointed out that there were 5,924 big, medium and small quarries in the state. Mudslides and landslides were reported in 211 different places across the state which is attributed to increasing stone quarrying activity and large-scale deforestation.
- Other factor which aided in flood are **deforestation drive** for development purpose, **Uncontrolled sand mining** has constrained river flows, while the rapid **spread of high-rise buildings** on unstable hill slopes has weakened the soil. This unplanned development has left the area susceptible to flash floods and landslides.
- **Large expanse of low lying areas**: About 10 per cent of its geographical area is below the sea level.

**Impact**

- **Impact on Agriculture**: Standing paddy crop and plantations of banana, rubber, cardamom, pepper and arecanut have been devastated as the floods have been concentrated in the plantation districts of Idukki, Kottayam and Wayanad.
- **Loss of Livelihood**: According to Care Ratings, employment of nearly 41.3 lakh has been affected and the wage loss is estimated at around Rs 4,000 crore for August.
- **Loss of Soil Fertility:** Flood cause heavy damages to top soil, which takes time to be restored to its natural state.
- **Cultural loss**: Kerala government has cancelled the celebration of **festival Onam**, the harvest festival of Kerala.
- **Economic Impact:** According to ASSOCHAM, floods in Kerala could potentially have caused damage worth Rs 15,000-20,000 crore, which include infrastructural damages to 134 bridges and 16,000 km of Public Works Department roads.
- **Disease outbreak:** Following severe flooding, 196 **leptospirosis (rat fever) cases** and nine deaths have been confirmed in Kerala.
    - Leptospriosis (also called Weil's disease) is a waterborne bacterial disease, caused by the leptospiro bacteria. It rarely spreads from person to person and can be treated with common antibiotics. It's incubation period is between five and 14 days.

**NDMA guidelines on Management of Flood**

- Shifting the focus to preparedness by implementing Flood Management Programs (FMPs).
- Ensuring regular monitoring of the effectiveness and sustainability of various structures and taking appropriate measures for their restoration and strengthening.
- Continuous modernization of flood forecasting, early warning and decision support systems.
- Ensuring the incorporation of flood resistant features in the design and construction of new structures in the flood prone areas.
- Drawing up time-bound plans for the flood proofing of strategic and public utility structures in flood prone areas.
- Improving the awareness and preparedness of all stakeholders in the flood prone areas.
- Introducing appropriate capacity development interventions for effective FM (including education, training, capacity building, research and development, and documentation.)
- Improving the compliance regime through appropriate.

**Dam Management in India**

- About 75 percent of the large dams in India are more than 25 years old and about 164 dams are more than 100 years old. A badly maintained, unsafe dam can be a hazard to human life, flora and fauna, even India has had 36 dam failures in the past.

**Dam Rehabilitaton and Imporovement Plan (DRIP)**

- It is an externally-aided project. 80% of the total project is provided by the World Bank as loan/credit and remaining 20% is borne by the States / Central Government (for CWC).
- This project started in April 2012, for repair and rehabilitation of initially 225 Dams across seven states namely Jharkhand (DVC), Karnataka, Kerala, Madhya Pradesh, Odisha, Tamil Nadu, and Uttarakhand (UJVNL).
- At present there are 198 Dams under this project which are scheduled for completion in June 2018.
- Objective of DRIP –

- to improve the safety and operational performance of selected existing dams and associated appurtenances in a sustainable manner, and
- to strengthen the dam safety institutional setup of participating States / Implementing Agencies.

**Emergency Action Plan**

- The Emergency Action Plan (EAP) for the Dams under DRIP has been proposed. EAP is a formal plan that identifies potential emergency conditions at a dam and prescribes the procedures to be followed to minimize loss of life and property damage.
- EAP help in streamlining the efforts and bring about better coordination among different agencies to execute rescue and relief activities.

**Dam Safety Bill, 2018**

- The objective of this Bill is to help develop uniform, countrywide procedures for ensuring the safety of dams and provides for proper surveillance, inspection, operation and maintenance of all specified dams in the country to ensure their safe functioning.
- It provides for constitution of a **National Committee on Dam Safety** which shall evolve **dam safety policies** and recommend necessary regulations
- It provides for establishment of **National Dam Safety Authority** as a **regulatory body** which shall discharge functions to implement the policy, guidelines and standards for dam safety in the country.
- The Bill provides for constitution of a **State Committee on Dam Safety** by State Government.

**About State Committee on Dam Safety**

- It will ensure proper surveillance, inspection, operation and maintenance of all specified dams in that State and ensure their safe functioning.
- It lays onus of dam safety on the dam owner and provides for penal provisions for commission and omission of certain acts.
- Every state having specified number of dams will establish **State Dam Safety Organization** which will be manned by officers from the field dam safety preferably from the areas of dam-designs, hydro-mechanical engineering, hydrology, geo-technical investigation, instrumentation and dam-rehabilitation.

## 5.2. NATIONAL REDD+ STRATEGY

**Why in news?**

Union Ministry for Environment, Forest and Climate Change (MoEFCC) **released National REDD+ Strategy**, which will help to fulfill **India's NDC commitment under Paris Agreement of climate change.**

**Background**

| | |
|---|---|
| **COP 11, 2005 at Montreal** | Coalition of 9 rainforest nations sought attention to growing threat of deforestation and introduced concept of **Reducing Emission from Deforestation (RED)** |
| **COP 12, 2006 at Nairobi** | '**Compensated Conservation**' policy **introduced** by **India** intended to compensate countries for maintaining and increasing **carbon pools** of their forests. |
| **COP 13, 2007 at Bali** | '**Compensated Conservation'** policy approach finally **recognized** |
| **COP 16, 2010 at Cancun** | Official entry of **REDD** as a UNFCCC-enabled mitigation mechanism |
| **COP 19, 2013 at Warsaw** | It agreed on **Warsaw REDD+ framework**<br>• **Finance**: It encourages financing entities, including the Green Climate Fund in a key role, to channel adequate and predictable results-based finance in a fair and balanced manner, and increasing the number of countries that are in a position to obtain and receive payments for results-based actions<br>• It recognizes the importance of **incentivizing non-carbon benefits** for the long-term sustainability. |

| | |
|---|---|
| | • It encourages Parties and the private sector to take actions to **reduce the drivers of deforestation** and forest degradation<br>• It encourages stakeholders to meet, on a voluntary basis to address issues relating to **coordination** of support<br>• **Modalities for national forest monitoring systems:** It should be guided by IPCC guidance and provide data and information that are transparent and consistent over time.<br>• Framing procedures for the technical assessment to support **capacity-building** for development and assessment of forest reference emission levels and/or forest reference levels. |

**Need for National REDD+ Strategy**

- Forest is the second-largest land use in India after agriculture.
- Forestry sector in India can make positive contribution for climate change mitigation like carbon mitigation services of India's forest by improving carbon stocks (carbon pools).
- As estimated, REDD+ programme could provide for capture of around 1 billion tonnes of additional $CO_2$ over the next 3 decades and significant financial incentives as carbon services under REDD+ including **flow of positive incentives to local communities.**

**National REDD+ Strategy**

The strategy seeks to address drivers of deforestation and forest degradation and also developing a roadmap for enhancement of forest carbon stocks and achieving sustainable management of forests through REDD+ actions. Important provisions include -

**Carbon pools**

A system that has the capacity to store or release carbon.

The Marrakesh Accords recognize five main carbon pools or reservoirs in forests: Above-ground biomass, below-ground biomass, dead wood, litter and soil organic matter.

- **Coverage of REDD+**
  - REDD+ will cover all trees within forest areas and tree outside forest (TOF)
  - Research is being undertaken to assess the potential of carbon sequestration by grasslands, and coastal sea grasses, salt marshes, phytoplankton etc.
- **Phased approach of REDD+**
  - *Phase 1:* development of national strategies or action plans, policies and measures, and capacity-building.
  - *Phase 2:* implementation of national policies,measures and national strategies or action plans
  - *Phase 3:* evolvement into results based actions that should be fully measured, reported and verified.
- **Sub-national REDD+ Approach**
  - The country has been divided into 14 physiographic zones by the FSI. State Governments may collaborate and develop REDD+ Action Plan in a physiographic zone.
- **REDD+ Activities**
  - It includes Reducing Deforestation, Reducing Forest Degradation, Conservation of Forest Carbon Stocks, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks.
  - Initiatives for Enhancement of Enhancement of Forest Carbon Stocks include Namami Ganga, Forestry Interventions for Other Major River Catchments, Green Highways (Plantation, Transplantations, beautification & Maintenance) Policy – 2015 and innovative programmes like Green Army of Maharashtra.

**REDD+**

REDD+ means "Reducing Emissions from Deforestation and forest Degradation", conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks in developing countries. REDD+ aims to achieve climate change mitigation by incentivizing forest conservation.

- **Developing strategies for addressing Deforestation and Forest Degradation**
  - Creating proper awareness amongst stakeholders.
  - Improved Cook Stoves for Addressing Forest Degradation
- **Capacity Building and Trained Human Resource**
  - Building a Cadre of Community Foresters.

- Green Skill Development Programme.

- **Appointing Targets & appropriate Infrastructure Development**
  - State/UT Governments to work out the appropriate targets of afforestation and reforestation (A&R) for each State/UT that would enable the country meet the objectives of Green India Mission and NDC target.
- **Funding**
  - Finance Commission has recommended devolution of funds to states attaching a weightage of 7.5% of the State's forest cover.
  - Compensatory Afforestation Fund.
  - Green Climate Fund and Other External Sources of Funding

## 5.3. BAN ON PETCOKE

**Why in News?**

India recently banned the import of petcoke for use as fuel.

**Background**

- Environment Protection (Prevention and Control) Authority (EPCA) in April 2017 had asked for the ban on use of furnace oil and pet-coke in NCR region.
- Supreme Court had banned its use in Delhi and NCR in October, 2017.
- Following which the Central government decided to ban pet coke nationwide.
- Though the Import of petcoke for fuel purpose is prohibited. It is allowed only for cement, lime kiln, calcium carbide and gasification industries, when used as the feedstock or in the manufacturing process on actual user condition.

**About Pet Coke**

- Petroleum coke or pet coke, is a **solid carbon rich** (90% carbon and 3% to 6% sulfur) material derived from oil refining.
- It is categorized as a "bottom of the barrel" fuel.
- It is a dirtier alternative to coal and **emits 11% more greenhouse gases than coal** and nearly 17 times more sulphur than coal.
- Petcoke is a source of fine dust which can get lodged in the lungs.
- Petroleum coke can **contain vanadium which is a toxic metal**.
- Sulphur-heavy petcoke and other polluting fuels such as furnace oil are widely used by cement factories, dyeing units, paper mills, brick kilns and ceramics businesses.
- India is the **world's largest consumer of petcoke**. Its consumption has grown at a compound annual growth rate of 16 per cent over the past 10 years.
- India had been becoming a **dumping ground of pet-coke** from the US, which has banned its internal use because of pollution.

**Reasons for use of Pet Coke**

- **Cheaper alternative:** Per-unit delivered energy for petcoke is much cheaper compared to coal making it attractive for buyers.
- **Favourable tax regime:** Though both these fuels are taxed at 18% under GST but the industries, which used these fuels for manufacturing, got entire tax on the fuels credited back. On the other hand on natural gas, which is not included in GST, the VAT is as high as 26 per cent in certain states.
- **Clean energy cess** of Rs. 400 per tonne levied on coal, further promote shift to pet-coke.
- **Zero Ash Content** in Pet coke is a big advantage over coal which has significant ash content. It also allows cement firms can use low grade limestone. This is a big advantage as almost 60 per cent of India's limestone reserves are low grade in nature.

**Impact of the ban**

- This decision gives a boost to the cement industry as it accounts for about three-fourth of the country's petcoke use. Cement companies were impacted by the recent petcoke-related policy flip-flops.
- The ban would benefit LNG importers, city gas distribution (CGD) etc. as other industrial units would shift from petcoke to alternate fuels such as natural gas.
- Import of pet coke costs about Rs 15,000 crore annually and hence the ban would save precious foreign exchange.

## 5.4. PARIVESH

**Why in News?**

Recently, government launched an integrated environmental management system named; **PARIVESH** (**P**ro-**A**ctive and **R**esponsive facilitation by **I**nteractive, **V**irtuous and **E**nvironmental **S**ingle-window **H**ub).

**About PARIVESH**

- It is a web based, role-based workflow application which has been developed for online submission and monitoring of the proposals submitted by the proponents for seeking Environment, Forest, Wildlife and CRZ Clearances from Central, State and district level authorities.
- It automates the entire tracking of proposals which includes online submission of a new proposal, editing/updating the details of proposals and displays status of the proposals at each stage of the workflow.
- The system includes monitoring of compliance reports including geo-tagged images of the site by regulatory body or inspecting officers even through the Mobile App for enhanced compliance monitoring
- It also provides access to previous Environment Impact Assessment Reports, which is a valuable reservoir of information.

**Significance of PARIVESH**

- It will improve the entire process of appraisal and environmental clearance because delay in environment clearance can cause a huge monetary loss and negatively impact business prospect of that region.
- It will ensure transparency and expedite the process of granting clearance by enabling project proponent and citizen to track and interact with scrutiny officers, generate online clearance letters.
- The Project Proponent can also track the movement of their application at different stages and can see the findings of the Expert Appraisal Committee on their project proposal.
- It has been developed in pursuance of the spirit of 'Digital India' and capturing the essence of "minimum government and maximum governance".

## 5.5. GENETICALLY MODIFIED (GM) FOOD

**Why in News?**

Recently, a Centre for Science and Environment (CSE) study found the wide presence of GM ingredients in packaged food items sold in India.

**What are GM foods?**

GM foods involve taking genes (DNA) from different organisms and inserting them in food crops for the purpose of enhancing its productivity or increasing its immune power or nutritional and aesthetic values. There is a concern that this 'foreign' DNA can lead to risks such as toxicity, allergic reactions, and nutritional and unintended impacts.

**Safety of GM Foods**

- Safety of GM crops and products has been a matter of concern for human health. Risk assessment on a case-by-case basis is critical for a country-level decision to allow or restrict GM foods because various GMOs have different genes, which are inserted in multiple ways. Also, studies used to evaluate the risk must take into account different populations and geographies.

**Safety of GM foods in India**

In 2017, a Parliamentary Committee report that examined the impact of GM crops on environment and human and animal health identified huge gaps with respect to the safety of GM crops. It noted the following key issues:

- There has been no Indian scientific study carried out so far to study the impact of GM crops on human health.
- The government should reconsider its decision to commercialize GM crops in the country as it has not been scientifically proven that GM crops have no adverse impact on human health. It is relying solely on studies that have not been done in India rather than on our own population and in the context of our climate and environment.
- It is very late in the day for the FSSAI to take a decision to label GM foods imported into the country. However, the committee strongly recommends that labeling on GM foods must be done with immediate effect.

**Codex Alimentarius guidelines for assessing risks associated with GM foods:**

- Typically, the following parameters are considered for risk assessment:
  - **Toxicity**—acute, sub-chronic and chronic
  - **Allergenicity**, i.e. the potential to provoke allergic reaction due to cross reaction with other allergens or from new unknown GM proteins
  - **Composition analysis of major and minor nutrients**
  - **Nutritional effects** associated with genetic modification that could arise if GM DNA is inserted into the crop genome at a location where it modifies the existing DNA such that the nutritional content of the crop alters.
  - **Stability of inserted gene** to avoid its unintended escape into cells of the body or to bacteria in the gastrointestinal tract. This is particularly relevant if antibiotic-resistant genes, used as markers while creating GMOs, were to be transferred.
  - **Unintended effects** that could result from the gene insertion leading to formation of new or changed patterns of metabolites.

**Draft notification on labeling of GM foods**

- It was issued by FSSAI in May this year which mandates that any food that has 5 per cent or more GM ingredients, shall be labeled, provided this GM ingredient constitutes the top three ingredients in terms of percentage in the product.
- Despite these, most GM foods studied did not disclose the fact on the label. A few also made false claims of being GM free. Nearly 65% of the samples that were found GM positive did not disclose its genetically modified ingredients.

**Criticisms against FSSAI**

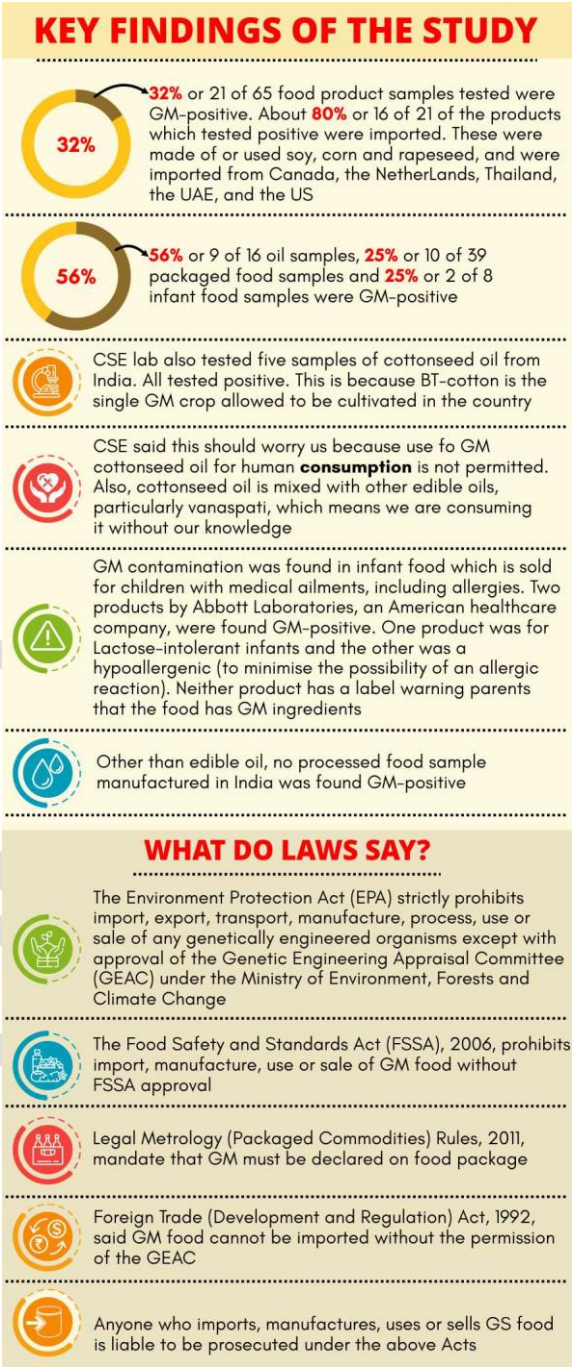
- **Against draft labeling regulations:** The exemption limit of 5 per cent in the draft notification of labeling is very relaxed compared to other countries such as the EU, Australia and Brazil, which have limits at or below 1 per cent. Also it is very difficult for government to quantify the GM content in all foods as the tests are prohibitively expensive and technically cumbersome.
- **FSSAI has not allowed any GM food on paper but has failed to curb its illegal sales:** Since 2007, GM soybean and canola oils are being imported in India without the approval of FSSAI though GEAC had permitted its import.

**Regulatory issues in the approval process for GM processed foods:**

- Since 1989, the **Genetic Engineering Appraisal Committee (GEAC)** under the Ministry of Environment, Forest and Climate Change (MoEF&CC) has been responsible for approving commercial cultivation of GM crops as

well as the manufacture, import and selling of processed foods made from GM ingredients. So far, Bt cotton has been approved for cultivation.

- After the enactment of **the Food Safety and Standards Act in 2006**, the GEAC wanted to restrict itself to approval of living modified organisms (LMOs) and shift the task of approval of processed foods to the FSSAI for which a notification was also issued in 2007.
- In response, the **Ministry of Health and Family Welfare (MoHFW)** requested the MoEF&CC to continue regulating processed foods until the FSSAI was ready to do so in a scientific manner. The notification was kept in abeyance until 2016, making the GEAC responsible for approvals of processed foods, with no accountability of the FSSAI in practice despite **Section 22 of the Food Safety and Standards Act, 2006 (FSS Act)** stating that GM foods shall not be manufactured, sold, distributed or imported until the FSSAI approves them.
- Meanwhile, in 2013, the **Legal Metrology (Packaged Commodities) Rules, 2011** were amended to mandate that packages containing genetically modified foods bear the words 'GM' on its principal display panel.
- This rule was inconsistent with the fact that GM foods are not allowed in India and in fact created the false perception that GM food was allowed.
- The **FSSAI's new draft labeling regulation** of April 2018 aims to address the issue through labeling of GM foods. **(For Draft labeling norms refer May 2018 VisionIAS current affairs)**




**Way Forward**

- The FSSAI must identify all GM products being sold in the market and prosecute companies and traders responsible.
- It must set up a safety assessment system for approval of both domestic and imported GM foods.
- India's GM labeling regulations must be based on stringent exemption limit and qualitative screening as an enforcement tool meaning that all products wherein GM ingredients are used must be labeled even if the final product does not contain GM DNA or protein. The threshold limit for GM labeling exemption should be set at one per cent GM DNA and not on the weight of the ingredient.
- The FSSAI should adopt qualitative screening (such as through quantitative polymerase chain reaction - qPCR) as an enforcement tool and the onus of proving unintentional presence should be on the food manufacturer. It must set up laboratories to screen GM foods for effective monitoring.
- A symbol-based label such as 'GM' should be displayed on the front of packs which carry GM food -- just like the green "tick" along with the words "Jaivik Bharat" proposed for organic food.

**(For Draft labeling norms refer May 2018 VisionIAS current affairs)**

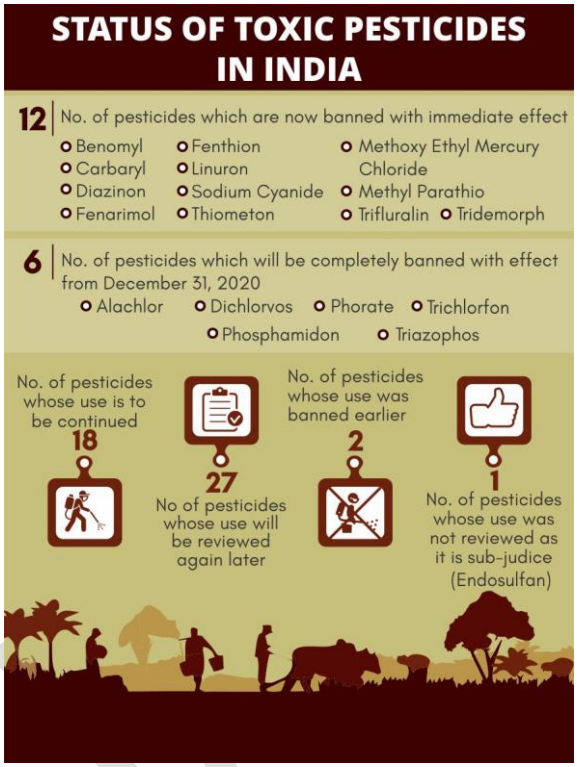
## 5.6. PESTICIDES BAN

**Why in News?**

The Government of India has decided to ban the use of 18 pesticides following the recommendations of the Anupam Verma Committee.

**More about the news**

- The complete ban of 12 pesticides would come into effect immediately while the rest 6 would be banned from December 31, 2020.
- The decision is based on **Anupam Verma committee** which was constituted in 2013 to review the use of 66 pesticides (which are either banned or restricted in other countries.) recommended a ban on 13 'extremely hazardous' pesticides , phasing out of six 'moderately hazardous' ones by 2020, and review of 27 pesticides in 2018.




**Significance of the Ban**

- The pesticides proposed to be banned are harmful not just to humans and animals but also leech into the soil and water bodies and harm the aquatic ecosystem.They also lead to bioaccumulation.
- India is likely to improve its reputation in countries (where the concerned pesticides are banned) which imports food related products (both manufactured and raw) from India.

**Concerns surrounding pesticide ban**

- It is estimated that at least 104 pesticides licenced for use in India have been banned in other parts of the world, whereas Verma Committee only reviewed 66. For example Glyphosate was not among the pesticides reviewed by the Verma committee even though it is banned in several countries.
- There are also concerns that Committee left out certain deadly pesticides like Monocrotophos and had asked the industry to come up with safety data on these pesticides.
- Once registered, safety information about pesticide molecules is not legally required to be reviewed periodically to keep pace with toxicological research. Further, only the Centre can ban pesticide molecules. States can only either refuse licences for their sale and manufacture or impose temporary bans no longer than 90 days.
- This means Indians are regularly exposed to a deadly cocktail of pesticides, through direct application or in their food chain, with little updated information about the safety of the chemicals to humans or the environment.

**Regulations for pesticide in India**

- Insecticide Act 1968, was enacted to regulate imports, manufacture, storage, transport, sale, distribution and use of insecticides with a view to prevent risk to human beings and animals.
- The Central Insecticide Board and Registration Committee (CIBRC) approves the use of pesticides in India.
- The health and family welfare ministry monitors and regulates pesticide levels in food, and sets limits for residues in food commodities.
- Department of Agriculture, Co-Operation & Farmers Welfare (DAC&FW) has launched a scheme "Strengthening and Modernization of Pest Management Approach in India" to promote Integrated Pest Management (IPM).
- "Grow Safe food" Campaign has been initiated to create awareness about the safe and judicious use of pesticides among the various stakeholders
- India is signatory to UNEP led Stockholm Convention for persistent organic pollutants and Rotterdam convention which promotes open exchange of information and calls on exporters of hazardous chemicals to use proper labelling, include directions on safe handling, and inform purchasers of any known restrictions or bans.
- Draft Pesticides Management Bill 2017 aims to regulate the manufacture, imports, storage, transportation, inspection, testing and distribution of pesticides.

## 5.7. KAZIRANGA NATIONAL PARK

**Why in news?**

The Kaziranga National Park (KNP) had been split into two divisions — the existing Eastern Assam Wildlife and the new Biswanath Wildlife park with Brahmputra flowing in between.

**More on news**

- The Kaziranga South Division will cover all areas of Kaziranga situated on the south bank of the Brahmaputra with existing four Ranges viz. Kaziranga (Kohora), Eastern Range (Agaratoli), Western Range (Bagori) and Burhapahar Range.
- The **headquarters of the North division** will be at Biswanath with three ranges under this division at Biswanath, Panpur and Gohpur (Gomeri). The Panpur Range and the Gohpur Range (Gomeri) will be newly created under the proposed Kaziranga North division.

**About the Kaziranga National Park**

- Kaziranga protected area was established in **1904** and is located on the edge of the Eastern Himalayan biodiversity hotspot. It is a **UNESCO world heritage site**.
- The park is home to large breeding populations of elephants, wild water buffalo, and swamp deer other than the one-horned rhino.
- Kaziranga is recognized as an '**Important Bird Area'** by Birdlife International for the conservation of avifaunal species.
- There are five ranges in the Eastern Assam Wildlife Division. These are Kaziranga (Kohora), Eastern Range (Agaratoli), Western Range (Bagori), Burhapahar Range and Northern Range with headquarters at Biswanath. Of these ranges, four are located on the southern bank of the Brahmaputra, while the Northern Range is located on the north bank of the river.

**Reason for Bifurcation**

Due to expansion of area under the KNP, it became difficult for one division to manage the National Park and because of this these areas did not get the desired attention. Specific issues faced are-

- **Poachers remained un-convicted** due to large area of the park, which can now be curbed better as it mostly happened in the northern region, and officers from the southern side were unable to prevent it.
- The **funds allocated** were not only under-utilised but were largely unused, with bifurcation separate authorities will be more accountable.
- It will also **ease overcoming staff shortage** as northern region can now recruit from northern Assam separately and so with the southern region.

Tourism was also suffering largely due to above mentioned reasons, bifurcation will lead to better management and increased visitation and hence, the revenue.

**Criticism**

It is predicted that this decision may have benefits in the short run, but in the long run it may-

- come at the cost of the ecology, road and river network.
- result in increased noise an air pollution due to increased footfall.
- make the animals more 'zoo-like', and hence tamer, taking away the sense of adventure that attracts tourists to the Kaziranga National Park.

## 5.8. CHEETAH REINTRODUCTION PROJECT

**Why in news?**

Madhya Pradesh forest department seeks to revive the plan to reintroduce Cheetahs in **Nauradehi sanctuary**.

**About the Plan**

- National Tiger Conservation Authority (NTCA), is nodal agency for the Cheetahs reintroduction plan.
- In 2009 **Project Cheetah** was launched and Kuno Wildlife Sanctuary (MP) and Shahgarh area in Rajasthan were also identified as other two sites for cheetah reintroduction plan.
- Nauradehi was found to be the most suitable area for the cheetahs as its forests are not very dense to restrict the fast movement of Cheetahs.

**Significance of the move**

- It will make India the only country in the world to host six of the world's eight large cats, including lions, tigers, jaguars, panthers and leopards.
- Cheetah is the flagship species of the grasslands. This will help dryland ecosystems of India to return to their natural state.

**Issue Involved**

- Earlier plans for reintroduction of Cheetah have been stalled due to insufficient funds and inadequacy of field assessment.
- Some wild life experts are on the view that the introduction of African cheetah may act as an alien species to the native ecosystem which might generate negative effects on indigenous wild life species.

**Related Information**

**About Cheetahs**

- It was declared **extinct in India** in 1952 and last spotted in Chhattisgarh 1947.
- The only mammal to become extinct in India in last 1,000 years.
- **IUCN status:** Vulnerable

**National Tiger Conservation Authority**

- It is a statutory body and has overarching supervisory/coordination role as provided in the Wildlife (Protection) Act, 1972.
- It approves the Tiger Conservation Plan prepared by the State Governments.

## 5.9. NEW ELEPHANT RESERVE

**Why in News?**

Recently, Nagaland government declared the **Singphan Wildlife Sanctuary** as an Elephant Reserve, with the approval of central government.

**About the Singhphan Elephant Reserve**

- It is located in Mon district of Nagaland and spreads over an area of 5825 acres.
- It has huge tracts of forest, strategically located in contiguity with the Abhaypur Reserve Forest of Assam.
- Presently, elephant distribution habitat in Nagaland is highly fragmented, this move will give better protection and conservation of elephants in the state.
- After the declaration it became the 30th Elephant Reserve in the country.

**Related Information**

**Status of elephant conservation;**

- Elephant is **National Heritage Animal** and categorised as **Endangered** under IUCN list.
- It is under **schedule I of the Indian Wildlife (Protection) Act, 1972** and in **Appendix I** of the Convention on International Trade in Endangered Species of Flora and Fauna **(CITES).**
- **Singhbhum Elephant Reserve** in Jharkhand is the first Elephant Reserve of the Country.
- Karnataka has the highest number of elephants followed by Assam and Kerala respectively.

**Other Protected areas in Nagaland**

- Intanki National Park, Puliebadze Wildlife Sanctuary, Fakim Wildlife Sanctuary and Rangapahar Wildlife Sanctuary.

## 5.10. THE NATIONAL WILDLIFE GENETIC RESOURCE BANK

**Why in news?**

Union Science and Technology Minister dedicated the National Wildlife Genetic **Resource Bank (NWGRB)** in Hyderabad.

**More on News**

- It is established at Laboratory for Conservation of Endangered Species (LaCONES) and can store 17,000 vials worth of samples.
- So far, genetic resources from 23 species of Indian wild animals have been collected and preserved. However, it is planned to contain genetic resources from 250 species in the beginning.

**Related Information**

**Wildlife Genetic Resource Banking (GRB)** is a systematic collection and preservation of tissues, sperm, eggs and embryos, genetic material (DNA/RNA) of living beings.

**Laboratory for Conservation of Endangered Species**

- It is a dedicated laboratory of the CSIR-Centre for Cellular and Molecular Biology (CCMB), Hyderabad.
- It is the only institute in the country working towards conservation of endangered wildlife using modern biotechnologies to save endangered wildlife species of India.

**Utility of the institute**

- This facility would **increase the collection** of genetic resources from wildlife by **facilitating exchange of genetic material** between Indian zoos for maintaining genetic diversity.
- It would also facilitate research work.

## 5.11. 3D-PRINTED ARTIFICIAL REEF

**Why in news?**

Recently, World's largest 3D-printed reef installed in Maldives, for coral reefs survive due to threat posed by climate change and warming waters.

**About the 3D-Printed Artificial Reef**

- It was developed using computer modelling and a 3D printer, which resemble reef structures typically found in the Maldives.
- The reef structure is **cast in ceramic**, an inert material similar to the **calcium carbonate** found in coral reefs.
- Live coral was then transplanted within the artificial reef, where it will grow and colonize the structure.

**Significance**

- Rising temperatures across the reefs have led to coral bleaching thus the initiative is vital to ensure the survival of marine habitats.
- Traditionally, coral reefs take hundreds of years to form. However, given the speed of ongoing man-made habitat destruction, reefs wouldn't have time to recover.
- Artificial reefs helps in generating marine ecosystem and boosting commercial activities by providing fishing grounds.

**Related Information**

**What is an Artificial Reef?**

- It is a human made structure, similar to natural coral reef, built with the specific aim of promoting the marine life of an area.
- Most common forms of artificial reefs are submerged shipwrecks, bridges, lighthouses, etc, which often start functioning as marine habitat after a period of time.

**Similar Initiatives**

- In 2017, Tamil Nadu govt in collaboration with IIT Madras have been restoring **Vaan Island in Gulf of Mannar** by deploying **artificial reefs**.

**What is 3D-Printing Technology?**

- It is an additive process wherein an object is **created by laying down successive layers of material** until the object is created. Each of these layers can be seen as a thinly sliced horizontal cross-section of the eventual object.

## 5.12. STATE ENERGY EFFICIENCY PREPAREDNESS INDEX 2018

**Why in news?**

The Alliance for an Energy Efficient Economy (AEEE) under the leadership of the Bureau of Energy Efficiency(BEE) and NITI Ayog has recently released the first Nationwide 'State Energy Efficiency Preparedness Index' .

**Background**

- In 2001 the Energy Conservation Act was introduced which was instrumental in the formation of the Bureau of Energy Efficiency (BEE) and the State Designated Agencies (SDA) in the states. It also put in place the much-needed institutional framework for formulating energy efficiency policies and implementing them.
- National Mission for Enhanced Energy Efficiency (NMEEE) is one of the eight national missions under the National Action Plan on Climate Change (NAPCC). NMEEE aims to strengthen the market for energy efficiency by creating conducive regulatory and policy regime and has envisaged fostering innovative and sustainable business models to the energy efficiency sector. The Mission is implemented since 2011.
- To compliment such efforts the index was recently released considering energy consumption, energy saving potential and states' influence in implementing energy efficiency in buildings, industry, municipalities, transport, agriculture and DISCOMs.

**About State Energy Efficiency Index**

- Its 4 main objectives are-
  - Help drive EE policies and program implementation at state and local level
  - Highlight best practices and encourage healthy competition among states

- Track progress in managing states' and India's energy footprint
- Set a baseline for EE efforts to date and provide a foundation to set state-specific EE targets

- It examines states' policies and regulations, financing mechanisms, institutional capacity, adoption of energy efficiency and energy savings. The Index has 63 indicators in all - 59 across buildings, industry, municipalities, transport, agriculture and DISCOMs; and 4 cross-cutting indicators.
- In each sector, energy efficiency indicators have been developed to measure the impact of state initiatives in driving energy efficiency in states. The indicators are both qualitative and quantitative, which include outcome-based indicators as well to signify realisation of the intended performance outcomes, to the extent possible, for various energy efficiency policies and programs.
- The 'Front runner' states in the inaugural edition of the State Energy Efficiency Index are Andhra Pradesh, Kerala, Maharashtra, Punjab and Rajasthan.

**Major Parameters**

- **Building sector:** implementing UJALA for energy efficient lighting; incorporating Energy Conservation Building Code (ECBC) in municipal building bye-laws; Making mandatory energy audits for certain category of buildings and provide financial incentives for EE building construction and retrofits.
- **Industry sector:** BEE's PAT programme; Programmes for driving energy efficiency in MSMEs and other non-PAT industries are few and far between.
- **Municipal sector:** (Energy Efficiency Service Limited) EESL's Street Lighting National Programme (SLNP); EESL's Municipal Energy Efficiency Programme (MEEP) for public water works and sewerage system retrofits. Other state-level municipal energy efficiency initiatives.
- **Energy efficient transportation:** tracking the fuel efficiency of State Road Transport Undertakings (SRTU) which is published by MoRTH, Use of FAME scheme to purchase hybrid/electric vehicles.
- **DISCOMs**: reducing Transmission and Distribution (T&D) losses.

**Conclusion**

- Periodic release of the State Energy Efficiency Index shall help track progress in managing states' energy footprint and provide guidance in formulating data-driven, evidence-based policies and programmes at the state level.
- It will also contribute towards national energy data management by helping streamline energy efficiency data collection in states.
- The energy efficiency indicators shall be continuously revised and updated based upon the evolving EE landscape in India.

## 5.13. BIO-JET FUEL FLIGHT

**Why in news?**

Recently, India's first ever bio-jet fuel flight taken off by using the fuel developed by the CSIR-Indian Institute of Petroleum (IIP).

**About the initiative**

- Aircraft was powered with a blend of 75% air turbine fuel (ATF) and 25% bio-jet fuel made from jatropha crop.
- The bio-jet fuel developed by CSIR-IIP was recognised by American Standard for Testing and Material and received a patent by 2011.
- International standards permit a blend rate of up-to 50% bio fuel with ATF.

**Significance**

- **Reduce Dependency:** The large-scale production of bio-jet fuels would reduce dependence on traditional aviation fuel by up to 50 per cent on every flight and bring down fares.

**About Bio-Jet Fuel**

- It is a type of **Biofuel** which are produced from biomass resources and used in place of, or blended with ATF.
- Bio jet fuel can be produced from animal fat, used cooking oil, waste dairy fat, sewage sludge, etc.

**Characteristics**

- The oil needs to have a freezing point below -47 degrees so it doesn't freeze at altitudes at which planes fly.
- It should not catch fire on ground when being transferred into a plane.
- It must have the same density as ATF, have a certain calorific value and should not choke the filters.
- It has lower sulphur content which causes less wear and tear.

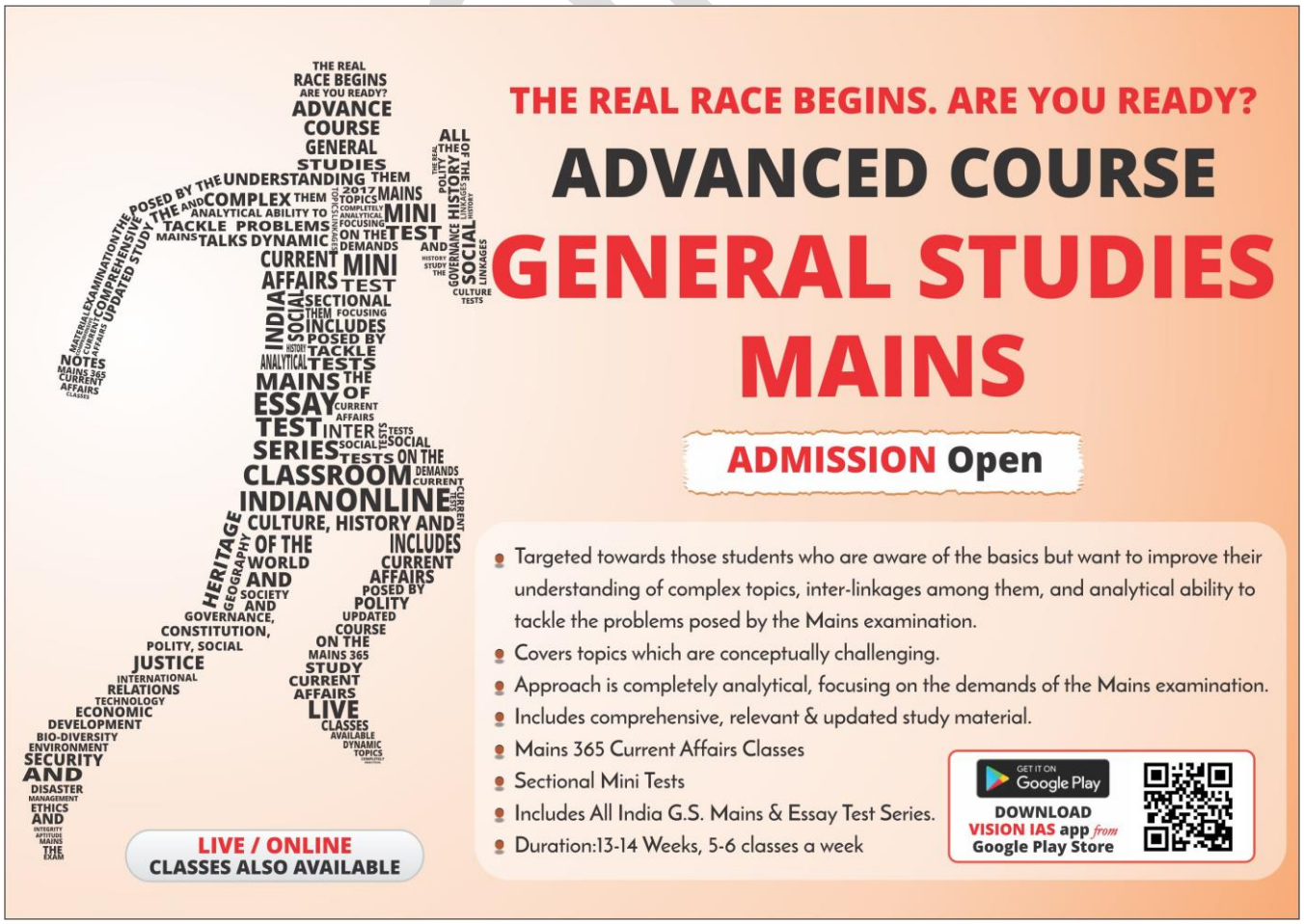
- **Cleaner Environment**: The move will be a step toward cleaner environment, because a flight completely powered by bio-jet fuel has the potential to reduce carbon emissions by up to 80 per cent.
- **Meeting Global agency target:** It will help in meeting the International Air Transport Association (IATA) target for one billion passengers to fly on aircraft using a mix of clean energy and fossil fuels by 2025.
- **Employment Generation**: Growth of bio-jet fuel and related infrastructure such as plant operations, village level entrepreneurs and supply chain management, will generate employment.
- **Additional Income to Farmers**: Nearly, 70% of the cost of the bio fuel constitutes the feed cost, if the production of these crops scaled up by demand side factors, there will be increase in famer income.

**Challenges**

- **High Cost:** It has noted that given the current immaturity of the supply chain of the aviation biofuel industry, these fuels have lower economies of scale and can cost almost two to three times higher than conventional ATF.
- **Agricultural Influence:** The availability of bio-fuel is highly depended on condition of agricultural production in the country. For instance, production of Jatropha and other bio-fuel crop varies seasonally and does not assure optimum supply levels needed to meet the demand at any given time.
- **Ambiguity regarding greenhouse gas emission:** Study by Yale university has found that use of plant jatropha (source of bio-jet fuel) could either reduce greenhouse gas emission by up to 85%, or increase them by 60%, depending on the circumstances in which it is produced.

**Step Can be taken**

- **Infrastructure:** The infrastructure to mass-produce bio-jet fuel, and to deliver it at airports, is in growing stage, therefore**, bio-jet fuel capable infrastructure** as developed in Los Angeles Air-Port should be adopted by other countries.
- **Balancing the production:** There is a need of balancing the production of raw material for **food security and energy security**, because production of the first generation of biofuels had shown the displacement of other agricultural activity.



# 6. SCIENCE AND TECHNOLOGY

## 6.1. GAGANYAAN MISSION

**Why in News?**

Recently the Prime Minister in his Independence Day speech announced that ISRO will be sending its first human spaceflight mission into the space by 2022.

**Background**

- In 2004, the manned space mission was first endorsed by the ISRO Policy Planning Committee with the target initially set was in 2015, preparations have been going on since then.
- ISRO has successfully demonstrated some of the technologies required for the mission such as **Space Capsule Recovery Experiment (SRE-2007)**, **Crew module Atmospheric Reentry Experiment (CARE-2014)**, **GSLV Mk-III (2014), Reusable Launch Vehicle- Technology Demonstrator (RLV-TD), Crew Escape System (July 2018)** and **Pad Abort Test (2018).** ISRO also recently unveiled a **space capsule** (crew module) and **Space suit prototype**.
- ISRO has also finalized the layout and design of **Environmental Control & Life Support System (ECLSS)** which maintains a steady cabin pressure and air composition, removes carbon dioxide and other harmful gases, controls temperature and humidity, and manages parameters like fire detection and suppression, food and water management, and emergency support.

**Specifications**

- GSLV Mk-III launch vehicle will be used to launch Gaganyaan. Two unmanned Gaganyaan missions will be undertaken prior to sending humans, with first unmanned flight within 30 months.
- The total programme is expected to be completed before 2022 and cost is expected to be less than Rs. 10,000 Crores.
- The mission will aim to send a three-member crew to space for a period of five to seven days. The spacecraft will be placed in a low earth orbit of 300-400km.
- This will be the **first human mission indigenously developed by ISRO**, though to accelerate the programme, ISRO may consider collaborations with space agencies from friendly countries.
- It will comprise of a crew module and service module that constitute an **orbital module**. The crew will do microgravity experiment during the mission.

**Need for Gaganyaan**

- **Potential for an enormous range of experiments in regard effects of microgravity and cosmic radiation** on bio-organisms ranging from bacteria and plants to large mammals. Some of the research at the International Space Station (ISS) has already started paying off in concrete terms, for instance, it has led to huge advances in multiple technologies ranging from weather research to disaster management to ballpoint pens.
- **Putting humans into space has also led to massive advances in medical technologies and basic understanding of functioning of human bodies:** For instance, microgravity can lead to a debilitating loss of muscle and bone density. Scientists have developed technologies and fitness mechanisms that have been breakthroughs in the treatment of osteoporosis and maintaining muscle mass.
- **Many of the present technologies were result of space research:** Telemedicine, including miniaturized ultrasound units and remote monitoring systems were developed through space research. Similarly, development of laser surgery and robotic surgery was a result of developing better laser technology as part of space technology.
- **Application of space technologies in various areas** such as Agriculture, Railways, Human Resource Development and Road, Transport & Highways, etc. for ease of living.
    - Water purification and sewage recycling can be transformed by adapting such technology at scale. For instance, NASA's water purification techniques are being deployed in drier regions of Africa.

**The Objectives of the Gaganyaan Mission are**:

- Enhancement of science and technology levels in the country
- A national project involving several institutes, academia and industry
- Improvement of industrial growth
- Inspiring youth
- Development of technology for social benefits
- Improving international collaboration

- Similarly, an ethylene removal system called Advanced Astroculture (ADVASC) was developed in space which removes viruses, bacteria and mould and is now being used to prolong the shelf life of fruit and vegetables and in winemaking.
- Also, Silica Aerogel developed by ISRO for space purposes found its utility in other fields like agriculture, etc.

- **Manned space research is a much larger employment generator than unmanned missions:** ISRO has estimated that the Gaganyaan Mission will create 15,000 jobs because of the new technologies involved.
- **Enhance national pride** as the programme will make India the fourth nation in the world to launch a Human Spaceflight Mission. So far, only the USA, Russia and China have launched human spaceflight missions.

**Challenges**

- **Biosciences:** While ISRO has perfected the engineering aspects of the mission, bioscience is a new field for ISRO that requires greater technological knowhow and collaboration and support from other organizations. Creating habitable space ecospheres also requires a host of technologies, including the development of exotic materials and first class recycling systems.
- **Cost:** Manned missions require huge investments. So, for a developing country like India with limited resources, there is always a debate on need of such costly missions versus spending on social sector.
- **Moving to a manned programme will involve research and development of a whole new range of technologies and precision:** It involves mastering of the highly complicated and dangerous reentry and recovery ability. The spacecraft needs to withstand very high temperatures, in excess of several thousand degrees. Also, the spacecraft needs to reenter the atmosphere at a very precise speed and angle, and even the slightest deviation could end in disaster.
- **Training of astronauts:** India lacks training facilities for astronauts, though ISRO has demanded for indigenous training centers for its astronauts since early 2000s, no action have been taken yet.

## 6.2. DRONE REGULATIONS IN INDIA

**Why in News?**

Ministry of Civil Aviation (DGCA) has for the first time released a set of rules regulating the civil use of drones in India which will be effective from 1st December, 2018.

**What are drones?**

- Drones or unmanned aerial vehicles (UAVs) have been defined as: "Powered, aerial vehicles that do not carry a human operator, use aerodynamic forces to provide vehicle lift, can fly autonomously or be piloted remotely, can be expendable or recoverable, and can carry a lethal or nonlethal payload."
- **Applications of UAVs**
  - **Damage assessment** of property and life in areas affected with natural calamities, surveys, critical infrastructure monitoring.
  - **Security function**: Drones are used by Armed Forces for tactical purposes at border.
  - **Surveillance and Crowd Management**: It is used for effective and smooth conduct of events like Kumbh Mela etc.
  - **Monitoring of wildlife**: UAV are deployed these days for better counting and guarding unreachable region.
  - **Agriculture: SENSAGRI (SENsor based Smart AGRIculture)** is a drone-based crop and soil health monitoring system using hyperspectral remote sensing (HRS) sensors.
  - **Mode of Delivery**: Many e-commerce companies are using it for delivering their product like Amazon.

**Concerns regarding use of drones**

- **Potential threat**: Its use poses a **security threat**, and has the potential for **invading privacy.** Owning to the privacy and security concerns Directorate General of Civil Aviation (DGCA) had earlier banned the launch of any UAVs in India.
- The airspace over Indian cities already has a high density of aircraft traffic and unregulated use of drones poses a grave **threat for air collisions and accidents.**
- **Drone traffic management:** It will require planned research and practical experimentation. Small drones fly at low altitudes and are more susceptible to changing weather conditions. Strong winds and rains can easily knock them off course, out of their designated operating zones.
- **Drones as weapons:** They are considered a cost-effective weapon system with no risk to operators. Thus, they are being portrayed as weapons of future warfare.
- There is possibility of drones being misused by terrorists, criminals, drug cartels and other antisocial groups.

- **Other uses:** For surveys, infrastructure monitoring, commercial photography, aerial mapping etc.

**Current Scenario**

- According to a research the Indian drone market will reach USD 885.7 million by 2021, and the global market size will touch USD 21.47 billion.
- The International Civil Aviation Organization (ICAO) has been the primary platform leading the global drone governance efforts. The ICAO has issued several rules in the form of circulars and manuals but has not come up with comprehensive guidelines.
- India has had military drones – or Unmanned Aerial Vehicles (UAV) – for many years and is also developing combat versions. But the use of drones for civilian purposes remain underdeveloped, because regulations regarding the technology were not yet fully established.
- The absence of well-defined regulations had made innovation and attracting investments very difficult in this field, and the new rules are expected to ease manufacture and use of drones in the country.

**Key features of the Regulations for Civil Use of Remotely Piloted Aircraft System (RPAS)**

- **The Digital Sky Platform** is the first-of-its-kind **national unmanned traffic management (UTM) platform** that implements "**no permission, no takeoff**" (NPNT).
  - The UTM operates as a traffic regulator in the drone airspace and coordinates closely with the defence and civilian air traffic controllers (ATCs) to ensure that drones remain on the approved flight paths.
  - Before every single flight, drone pilots are required to request permission to fly via a mobile app, which will automatically process the request and grant or reject it.
  - If a drone pilot tries to fly without receiving permission from the Digital Sky Platform, he or she will simply not be able to take-off.
- Users will be required to do a **one-time registration** of their drones, pilots and owners. All civil RPA, shall require to obtain **Unique Identification Number** (UIN) from DGCA.
- As per the regulation, there are 5 categories of Remotely Piloted Aircraft System (RPAS) categorized by weight, namely
  - Nano (Less than or equal to 250 grams),
  - Micro (250 grams to 2kg),
  - Small (2kg-25kg),
  - Medium (25kg-150kg) and
  - Large (Greater than 150kg).
- Operators of civil drones will **need to get a Unmanned Aircraft Operator Permit (UAOP) from the DGCA** with certain exceptions such as RPA owned and operated by NTRO, ARC and Central Intelligence Agencies.
- The DGCA has to issue the UAOP within seven working days and it shall be valid for five years and not transferrable.
- RPAS shall be flown only by someone **over 18 years of age, having passed 10th exam in English**, and undergone ground/ practical training as approved by DGCA.
- DGCA has also clarified that **no remote pilot can operate more than one RPA at any time**.
- The basic operating procedure will **restrict drone flights to the daytime only** and that too within "Visual Line of Sight (VLOS)".
- Manned aircraft will be given priority. There can't be any human or animal payloads, or anything hazardous. It cannot in any manner cause danger to people or property.
- An **insurance will be mandatory** to cover third-party damage.
- Minimum manufacturing standards have been prescribed for RPAS.
- **Restrictions placed:**
  - RPAS cannot be flown within 5km of the perimeters of the airports in Mumbai, Delhi, Chennai, Kolkata, Bengaluru and Hyderabad and within 3km from the perimeter of any other airport.
  - It cannot fly within "permanent or temporary Prohibited, Restricted and Danger Areas" and within 25km from international border which includes the Line of Control (LoC), Line of Actual Control (LAC) and Actual Ground Position Line (AGPL).
  - It cannot fly beyond 500 m into sea from the coast line and within 3 km from perimeter of military installations.

- It also cannot fly within a 5 km radius of the Vijay Chowk in Delhi, within 2 km from perimeter of strategic locations/ vital installations notified by Ministry of Home Affairs and within 3 km from radius of State Secretariat Complexes.
- It also cannot be operated from a mobile platform such as a moving vehicle, ship or aircraft.
- Eco-sensitive zones around National Parks and Wildlife Sanctuaries are off-limits without prior permission.

**Conclusion**

- The Drone Policy is a big step taken by GOI towards regulating drones in India. It shows GOI's commitment to use of artificial intelligence for technological and economic growth.
- However, the involvement of multiple regulatory agencies and compliances/clearances will discourage the players.
- Further, drones cannot be used as of now for delivery of food/ other items, or to carry passengers.
- There are restrictions on drone operations in India by foreign players (except through a license to an Indian entity).
- Government has setup the Drone Task Force under the chairmanship Jayant Sinha which will provide draft recommendations for Drone Regulations 2.0.

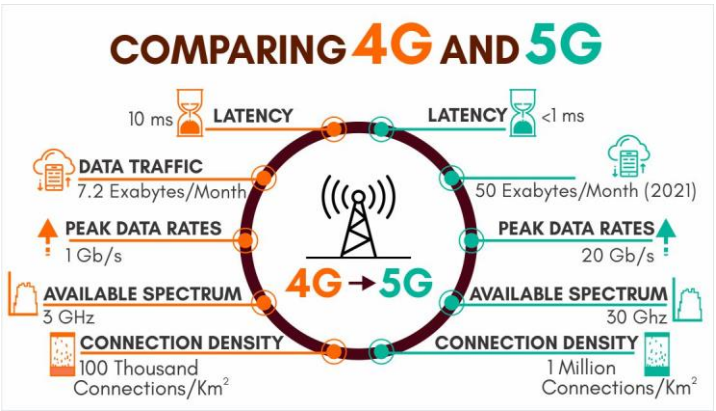
## 6.3. 5G

**Why in news?**

The Steering Committee constituted for identifying the 5G deployment roadmap for India recently submitted report titled 'Making India 5G Ready'.

**Background**

- Mobile wireless generation generally refers to a change in the nature of the system, speed, technology, frequency, data capacity, latency etc.
- Each generation has certain standards, different capacities, new techniques and new features which differentiate it from the previous technology.
- **First Generation (1G)** mobile wireless communication network was analog and was used for voice calls only. Its basic features were – speed of 2.4kbps, voice calls in one country only, use analog signal, poor voice quality etc.
- **Second Generation (2G)** is a digital technology and supports text messaging. Next to 2G. 2.5G system uses packet switched and circuit switched domain and provide data rate upto 144kbps e.g. GPRS, CDMA etc.
- **Third Generation (3G)** mobile technology provided high data transmission rate, increased capacity and provided multimedia support. The aim of this technology was to provide high speed data and offers data services, access to television/videos, new services like Global Roaming etc. It used Wide Band Wireless Network with which clarity is increased.
- **Fourth Generation (4G)** integrates 3G with fixed internet to support wireless mobile internet which is an evolution to mobile technology and it overcomes the limitations of 3G. Long Term Evolution (LTE) is considered 4G technology.




**What is 5G?**

- 5G is a wireless communication technology using **radio waves** or radio frequency (RF) energy to transmit and receive data.
- It is the next generation mobile networks technology after 4G LTE networks. 5G technologies will enter services gradually, beginning in 2019 and advance to a full range of services by 2024.
- The final standard for 5G will be set up by the **International Telecommunications Union (ITU).**
- Technical specification for 5G –
  - **high data rates** (1 Gbps for hotspots, 100 Mbps download and 50 Mbps upload for wide-area coverage)

- **massive connectivity** (1 million connections per square kilometre)
- **ultra-low latency** (1 millisecond)
- **high reliability** (99.999% for mission critical 'ultra-reliable' communications), and
- **Mobility at high speeds** (up to 500 km/h i.e. high-speed trains).

- The technology is still a long way from becoming a reality but it has the potential to completely change the way we interact with wireless devices.

**Advantages of 5G**

- **Faster Data Speed** – Currently 4G networks are capable of achieving the peak download speed of one gigabit per second. With 5G the speed could be increased upto 10Gbps.
- **Ultra-low latency** – Latency refers to the time it takes for one device to send a packet of data to another device. In 4G the latency rate is around 50 milliseconds but 5G will reduce that to about 1 millisecond.
- **A more Connected World** – 5G will provide the capacity and bandwidth as per the need of the user to accommodate technologies such as **Internet of Things**. Thus, will help to incorporate **Artificial Intelligence** in our lives.
- As per the **OECD (Organization for Economic Cooperation and Development) Committee** on Digital Economic Policy, 5G technologies rollout will help in **increasing GDP, creating employment and digitizing the economy.**
  - The cumulative economic impact of 5G on India can reach one trillion USD by 2035. It will help aid incorporation of **Artificial Intelligence** in our lives and will enable Smart devices to exchange data seamlessly providing the ecosystem for Internet of Things (**IoT**).
  - In agriculture, 5G can enable improvement in the entire value-chain, from precision farming, smart irrigation, improved soil and crop monitoring, to livestock management.
  - In manufacturing, 5G will enable use of robotics for precision manufacturing, particularly where humans cannot perform these functions safely or accurately.
  - In the energy sector, 'smart grids' and 'smart metering' can be efficiently supported. With the rise of renewable and storage technologies, low latency communications will be critical to manage these grids.
  - Vehicle platooning can double vehicle density in roads promoting efficient and safer use of the limited road infrastructure.
  - In health-care, 5G can enable more effective tele-medicine delivery, tele-control of surgical robotics and wireless monitoring of vital statistics.

**Steps taken**

- The Government has launched a program titled **'Building an End-to-End 5G Test Bed'**. The program envisages close collaboration between the universities and small technology companies to build broadly compliant with the 3GPP standards.
- A 5G High Level Forum was set up by the Government in September 2017 to articulate the Vision for 5G in India and to recommend policy initiatives and action plans to realize this vision.
- Several smaller academic R&D programs around 5G themes have also been funded by DST and MEITY.
- Ericsson has installed the first public access 5G test bed at IIT Delhi.

**Challenges**

- **Integration of various standards** – There are already multiple groups working to come up with standards around interoperability, backward compatibility with older technologies etc. Thus, standardization becomes a major challenge faced by 5G.
- **Common Platform** – There is no common architecture for interconnecting various engineering practices. Therefore, a common governing body should develop a common platform for all engineering practices.
- **Building Infrastructure** - It is a huge task, with issues around spectrum and installing new antennas.
- **Obstacles** – Like buildings, trees and even bad weather can cause interruptions which would require more base stations to be built to ensure better connections.
- India lacks a strong backhaul to transition to 5G. Backhaul is a network that connects cells sites to central exchange. As of now 80% of cell sites are connected through microwave backhaul, while under 20% sites are connected through fibre. The former has bandwidth issues as it uses traditional bands while the latter provides low latency and unlimited capacity (a prerequisite for 5G).
- The Indian market is yet to adapt to 4G completely and has not fully evolved to experience an AI revolution.

**Key Recommendations**

- The committee spells out **three priority areas** for India in 5G :
  - Deployment – rolling out early, efficient and pervasive 5G networks
  - Technology – building India's industrial and R&D capacity in 5G
  - Manufacturing - expanding the manufacturing base in 5G for both semiconductor fabrication as well as assembly & test plants
- **Spectrum Policy:** India's spectrum allocation for public wireless services should be enhanced significantly. Also, the cost of spectrum relative to per capita GDP is high and should come down.
- **Regulatory Policy:** Three expert **committees on business, security and safety** segments to be created to develop clear guidelines on regulatory policy.
- **Education and Awareness Promotion Program:** The Committee recommends **three initiatives**
  - Attract global 5G conference events to India
  - Set up national 5G events and
  - Create a comprehensive skills development program.
- **Setting up applications and Use Case Labs:** It can provide multiple functions – interoperability, testing for new applications, fostering innovation, etc. within different economic sectors.
- **Participation in International Standards:**
  - Short term initiatives like setting up 'Standards Project Teams' to participate in standards activities.
  - Long term initiatives like expert committee should be constituted to recommend a ten year strategy for Information Technology Standards in India.
- **Technology Demonstration and Major Trials**: 5G trials will be an important learning opportunity for our Telecom Service Providers (TSP), academia and industry.
- Create a **5G Program Office within Department of Telecommunications and an Oversight Committee.**
- New civil infrastructure like highways, roads, canals and utilities(gas, electricity, water) lines should be mandated to provision Common Telecom Infrastructure resources such as ducting and power junction boxes to support 5G infrastructure.
- Security audits, a prerequisite for importing of equipment before deploying in Indian networks, needs to be simplified.

## 6.4. DIGITAL PAYMENT

**Why in news?**

NITI Aayog recently pointed out that the digital payments market in India is set to become a trillion-dollar industry in the next five years, led by growth in mobile payments which are slated to rise to $190 billion by 2023 from $10 billion in 2017-18.

**About Digital Payment in India**

- **The Payment and Settlement Act, 2007 defines Digital Payments/electronic funds transfer** as any transfer of funds which is initiated by a person by way of instruction, authorization or order to a bank to debit or credit an account maintained with that bank through electronic means and includes point of sale transfers; automated teller machine transactions, direct deposits or withdrawal of funds, transfers initiated by telephone, internet and, card payment.
- The payment system can be bifurcated into **two main segments**:
  - The first segment consists of instruments which are covered under **Systemically Important Financial Market Infrastructure (SIFMIs)** and the second segment consist of **Retail Payments.**
  - **Financial Market Infrastructure (FMI)** is defined as a multilateral system among participating institutions, including the operator of the system, used for the purposes of clearing, settling, or recording payments, securities, derivatives, or other financial transactions. Under this segment there are four instruments of payments: Real Time Gross Settlement, Collateralized Borrowing and Lending Obligation, Forex Clearing and Government Securities.
  - Under the **Retail Payments segment** which has a large user base, there are three broad categories of instruments. They are Paper Clearing, Retail Electronic Clearing and Card Payments which includes Cheque Truncation System, National Electronic Funds Transfer, Unified Payments Interface, Immediate Payment Service etc.

- India's payment system - particularly, its digital payments system - has been evolving robustly over the past many years, spurred by developments in information and communication technology.
- Digital payment is a primary tool to move to a 'less cash' economy since the cash to GDP ratio in India is one of the highest in the world at about 12%.
- The **user base for digital transactions in India is currently close to 90 million** and could triple to **300 million by 2020** as new users from rural and semi-urban areas enter the market.
- The year-on-year growth of digital payments in 2017-18 was 44.6% which was nearly double the growth in volume for the period 2011-2016.
- Transactions relating to IMPS, PPI and Debit card had exhibited growth rates in triple digits in the year 2016-17.

**Benefits**

- Digital payment is **faster, easier, more convenient** than cash transactions.
- It **enables increased levels of financial participation** and inclusion.
- It **promotes more transparency and accountability** and decreases the size of the grey or informal economy.
- It **stores digital record of transactions** which customers can track.
- It helps to keep black money under control and also **increases tax compliance**.
- It **reduces cost of transactions**. No additional cost of printing cash is involved with digital payments. A 0.4% reduction in cost of cash can also boost savings by 4 trillion by 2025.
- Economic growth is increased by increasing the level of spending in the economy due to digital payment.
- It hinders the terror financing network and circulation of counterfeit notes.

**Challenges**

- **Unbanked population:** about 19 percent of the Indian population is still **outside the banking net** which is a major hurdle to digital payments.
- **Low internet penetration:** Internet penetration in urban India was 64.84% in December 2017 and rural internet penetration was just 20.26%.
- **Low levels of digital literacy:** Approx. 40% population is living below poverty line, illiteracy rate is more than 25-30% and digital literacy is almost no-existent among more than 90% of India's population.
- **Lack of resources:** Small Service providers don't have enough **resources** to invest in electronic payment infrastructure. (e.g. Point-of-sale terminals).
- **Cyber threats:** Cyberattacks can cause personal and commercial data to be lost or compromised causing financial institutions financial loss. Based on estimates, cyberattacks cost the global economy 1% of annual GDP.
- **Regulatory hurdles:** The majority of the mobile payment service providers are non-compliant with the strict provisions for dealing with sensitive personal data including financial data as mandated by IT Act, 2000 and rules under it. Also IT Act is not comprehensive. India lacks laws to protect consumers if they lose money.
- **Cash dependent economy:** 92% of the Indian economy is made up of informal workers, who contribute around 50% of the GDP; 80-90% of these workers are paid in cash. Mediums like smartphones and internet connectivity are still unaffordable to a sizeable population thus denying them access to digital forms of transaction.

**Initiatives taken to promote digital payments**:

- **The National Payments Corporation of India (NPCI)** was established in 2008 to spearheading the development of the retail payments system.
- Various important milestones attained in the development of the payments system include the introduction of MICR clearing in the early 1980s, Electronic Clearing Service and Electronic Funds Transfer in the 1990s, issuance of credit and debit cards by banks in the 1990s, the National Financial Switch in 2003 that brought about interconnectivity of ATMs across the country, the RTGS and NEFT in 2004, the Cheque Truncation System (CTS) in 2008, the second factor authentication for the 'card not present' transaction in 2009 and the new RTGS with enhanced features in 2013.
- These measures have been complemented by significant initiatives by the NPCI including the launching of grid-wise operations of CTS, RuPay (a domestic card payment network), Aadhaar Payments Bridge System and Aadhaar Enabled Payment System, National Unified USSD Platform (NUUP), UPI and the BHIM application.

- For promotion of the BHIM app, the Government had approved schemes namely 'Referral Bonus scheme for individuals' and 'Cashback scheme for merchants' for a period of 6 months
- Settlement at half-hourly intervals was introduced in the National Electronic Funds Transfer (NEFT) system.
- **Rationalisation of Merchant Discount Rate** was undertaken to provide a boost to digital payments.
- The digital infrastructure called the "**JAM**" trinity by interlinking of Jan Dhan, Aadhaar and mobile numbers was a major landmark.
- Furthermore, **non-bank entities have been introduced in the issuance of pre-paid instruments** (PPI), including mobile and digital wallets.
- Reserve Bank of India has also decided that all system providers shall ensure that the entire **data relating to payment systems operated by them are stored in a system only in India** to ensure better monitoring.
- **DigiShala:** Free Doordarshan DTH educational channel for creating awareness regarding various forms of electronic payment.
- **Vittiya Saksharta Abhiyan** of Ministry of Human Resource Development aims to actively engage the youth/ students of Higher Education Institutions to encourage and motivate all payers and payees to use a digitally enabled cashless economic system for transfer of funds.
- A Committee on Digital Payments was constituted in 2016 under **Ratan Watal** to recommend measures for promotion of Digital Payments Ecosystem in the country.

**Recommendations of Ratan Watal Committee**

- It recommends for **creation an independent payments regulator** within the framework of the Reserve Bank of India (RBI) or give independent status for the RBI's Board for Regulation and Supervision of Payment and Settlement Systems (BPSS) to be called the Payments Regulatory Board (PRB).
- It had also suggested **interoperability between banks and non-bank digital payment gateways/entities** as well as within non-banks.
- Other major suggestions have been creation of a fund for promotion of digital transactions, withdrawal of all charges on digital-based transactions by the government, with special emphasis on low-value transactions (that are mainly financed by cash).
- It had also asked RBI to upgrade the existing real-time gross settlement system (RTGS) and National Electronic Funds Transfer (NEFT) systems so that they operate on a 24/7 basis.
- It also called for mandating government departments and agencies to provide options to consumers to pay digitally as well as incentivize consumers to make payments (including payment of fines and penalties) to the government electronically by giving a discount or cashback.

**Way forward**

For smooth implementation of cash less system in India, a wide variety of measures are needed by the Government. It will have to bring transparency and efficiency in e-payment system, strategies licensing payment banks, promoting mobile wallets and withdrawing service charge on digital payments, etc.

- **Reducing the digital divide** and increasing the awareness in the rural public.
- **Ease the complexities and enable end-of-day settlement process for the merchants** (As small retailers and merchants need rotation of cashflow in quick turnaround time for their business operations).
- **Reduce the transaction charges** over the digital payments and discourage cash transactions.
- **ICT infrastructure** plays a vital role in successful adaptation of digital payments and hence there is intrinsic need to improve and offer requisite infrastructure for digital payments.
- Emphasis on integrated system of digital payments that can reduce the existing challenges and support in quality outcome (For instance, ensuring more stringent laws for security breach, IT ACT for digital payment transactions etc.)

## 6.5. DIGITAL NORTH-EAST VISION 2022

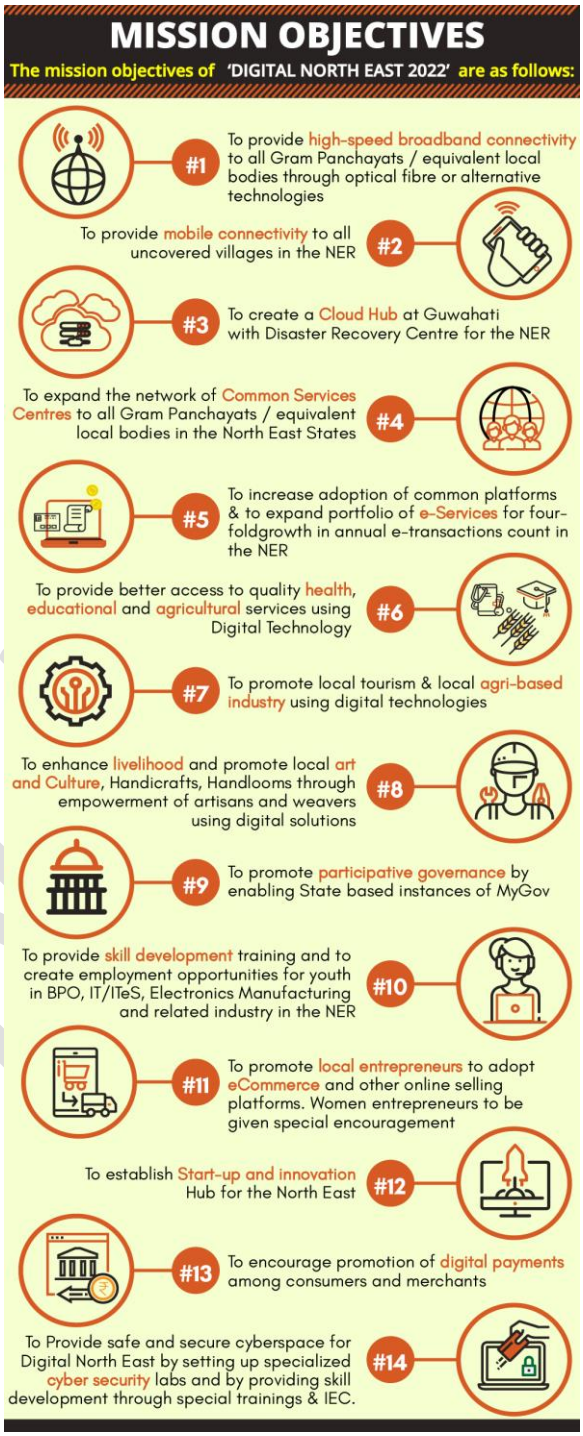
**Why in News?**

Recently government released **'Digital North East: Vision 2022'**, that aims to leverage digital technologies to transform lives of people of the northeastern states and enhance the ease of living.

**More on news**

- Under the Digital India programme government had earlier taken various digital initiative in North east such as: State Wide Area Network, Common services centre, National Knowledge Network, SMS based agricultural extension services etc.

- The Vision document aims to consolidate all the disparate digital initiatives with a view to restructure, refocus, and fast track implementation in a synchronised manner.
- **Launched under the Digital India programme** it will be coordinated by the **Ministry of Electronics and Information Technology** and will be implemented by various central government ministries and governments of north eastern states,
- The document identifies **eight digital thrust areas** -digital infrastructure, digital services, digital empowerment, promotion of electronics manufacturing, promotion of IT and IT enabled services including BPOs, digital payments, innovation & startups, and cyber security.
- It seeks to utililise the strengths and opportunities in the North East Region (NER):
    - **Strategic location:** The Act East policy of the government places the NER in very advantageous position to open up e-trade and commerce with the neighbouring countries and the ASEAN region.
    - **Literacy rate:** Literacy rate in NER are higher than the rest of India which provides pool of an easily skill-able workforce.
    - **Distinct Seismic Plate:** As per the Seismic Zoning Map of India, some of the North East States reside in a different seismic zone compared to rest of India, making it an ideal destination for call centres, disaster recovery stations for Tier 3 and Tier 2 cities.
    - **Cultural heritage:** The North East Region is home to more than 220 different tribes and communities, each having their unique culture, languages, handicraft and tradition. Digital repositories of such artefacts will create opportunity for massive digitisation.
    - **Natural resources:** The abundance of natural resources provides scope for developing industries in herbal products, Ayurveda, fruit processing, precision agriculture etc.
- The north eastern region is uniquely placed vis-à-vis the digital profile of India and the region has inherent strengths to be built upon and possess vast opportunities to be tapped for the overall development of India.




## 6.6. SCIENCE AND TECHNOLOGY IN SPORTS

- Innovation, design and application of technology to competitive sport is of paramount importance to athletes looking to **optimize their best possible performance** in the future.
- Enhance athletic performance by **reducing stress/injury via support aids and equipment and training technologies**
- Technology has greatly **improved protective equipments** in sports such as mouth guards and headgear
- Computer technology has **improved training regimes** for athletes through uses computer analysis to monitor performance as well as **virtual practice.**
- **Wearable Technology:** Coaches can use wearable tech to understand how an athlete is performing compared to their previous training sessions or games
- **The use of non-human decision-making** in sports such as Cricket, tennis etc. for clear decision and better outcome.

**Technological Advancements in Sports**

- **Hawk-Eye Technology:** It helps to take an error-free decision in cricket, lawn tennis, rugby league, football, and baseball. This technology has reduced the criticism of the players and spectators about the decision of the match referee.
- **HANS** (**Head and Neck Support) device** used in motorsports saving the lives of driver in the event of a tragic crash.
- **Whole body polyurethane swim** suits which contains polyurethane membrane which decreases the drag by 24% compared to other suits
- **Prosthetic Devices** for Disabled Athletes
- **Ingestible Thermometer Pills** which supervise visceral organs, temperature and heart rate of an athlete and transmits vital information to medical personnel. It will help to minimize death from heat exhaustion which is the second most common reason for athlete fatalities.

**Issues and Challenges**

- **Fairness**: The use of technological applications is used as tool to gain a **'competitive advantage'** in sports.
  - Modern runners and climbers benefit from shoe technology that's better suited to their sports.
  - In cycling, riders wear advanced fabrics to maximise aerodynamics and optimise core body temperature while using different bikes based on terrain or effort.
- **Accessibility:**
  - If the equipment is too technically difficult to use then amateurs will have to move onto something else.
- **Affordability**:
  - If sports equipment and technology is too expensive then very few future athletes will be able to participate.
  - Part of the controversy around swimsuits was the fact that only athletes with the right sponsors could access them.
- **Safety**:
  - Headgear in amateur boxing was adopted to provide extra protection to its athletes. But it gives a boxer an **increased sense of invulnerability**. That's why there has not been a reduction in the number of recorded head injuries since headgear was introduced.
- **De-skilling' a sport**: De-skilling insinuates that a sport is made easier to undertake as a result of the introduction of a technology or product.
  - The sport of aeromodelling has suggested that performance enhancements made to the planes design and controls would reduce the technical skill required to fly the planes
- **Governing body oversight issues:**
  - Having multiple governing bodies of the same sport which operated in different countries has caused issues whereby an innovation was accepted by one governing body but not by another
- **Doping**: It is the use of banned athletic performance enhancing drugs by athletic competitors.

**Way forward**

- Sports are based on rules, and by setting those rules, we can choose which technologically enabled enhancements are allowed.
- Only if it is a piece of technology that helps someone run faster, it could be banned.

## 6.7. INNOVATION CELL

**Why in news?**

MHRD recently launched the Innovation Cell at All India Council of Technical Education (AICTE) premises with a purpose to systematically foster the culture of Innovation in all Higher Education Institutions (HEIs) across the country.

**Details**

The primary mandate of Innovation Cell is to encourage, inspire and nurture young students by exposing them to new ideas and processes resulting in innovative activities in their formative years fostered through Network of Innovation clubs in Higher Educational Institutions.

**Major Programs**

- **Network of Innovation Clubs (NIC)** - details will released soon by the ministry.
- **Atal Ranking of Institutions on Innovation Achievements (ARIIA)** - to systematically rank education institutions and universities primarily on innovation related indicators. It will primarily focus on 5 main parameters -
  - Budget expenses and revenue generated through innovation and entrepreneurship
  - Facilitating access to advance centres/facilities and entrepreneurial support system
  - Idea to entrepreneurship
  - Development of innovation ecosystems supported through teaching and learning
  - Best innovative solutions developed in-house for improving governance of your institution
- **Smart India Hackathon (SIH) 2019** - to provide students a platform to solve some of pressing problems we face in our daily lives, and thus inculcate a culture of product innovation and a mindset of problem solving.
- **National Student Startup Policy (NSSP)** - launched in 2016 to guide AICTE approved institutions to promote student driven innovations and start-ups. The policy aims at identifying the innovative and entrepreneurial potential of students and transforming them into start-up entrepreneurs. This can be done by developing an ideal entrepreneurial ecosystem and promoting strong inter-institutional partnerships among technical institutions, other ecosystem enablers, different stakeholders, programs, market and society.

## 6.8. PRIME MINISTER'S SCIENCE TECHNOLOGY AND INNOVATION COUNCIL (PM-STIAC)

**Why in news?**

Union Government recently constituted new 21-member advisory panel on science, technology and innovation called Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC).

**More on news**

- It will be chaired by the government's Principal Scientific Advisor, Dr K. Vijay Raghavan. It will **replace two scientific advisory committees** for the prime minister and the cabinet, and is aimed to streamline as well as cut down the number of committees and councils.
- The council includes secretaries from various departments/ministries and is expected to act as a high level advisory body to several ministries and execute mission-oriented programmes. The new panel will advise the PM on all matters related to science, technology and innovation, and would also monitor the implementation of the PM's vision.
- It will also advise government on developing 'Clusters of Excellence' in science including city-based R&D clusters. It will work to bring together all science and technology partners from academia and institutes to industries near such centres or cities.

## 6.9. IMPRINT – II

**Why in news?**

Recently, it was reported that 122 new research project were selected under IMPRINT- II.

**About IMPRINT**

- **Impacting Research, Innovation and Technology** or **IMPRINT** is a national initiative of Ministry of Human Resource Development (MHRD) which aims to address engineering challenges in **10 technology domains** relevant to India through an inclusive and sustainable mode.
- The 10 domains include**:** (i) Health care (ii) Information and Communication Technology (iii) Energy (iv) Sustainable Habitat (v) Nano-technology Hardware (vi) Water Resources and River systems (vii) Advanced Materials (viii) Manufacturing (ix) Security and Defense (x) Environmental Science and Climate Change
- IMPRINT was launched in 2015 as a joint initiative of IIT and IISc under which 142 project are being implemented presently.
- The round two of IMPRINT – **IMPRINT II**, will be jointly funded and steered by MHRD and Department of Science and Technology.

- Key features of IMPRINT-II include–
  - Principle objective is to translate knowledge into viable technology
  - MHRD and DST will be equal partners in the scheme
  - It will be open to all MHRD funded Higher Education Institute (HEI)/Centrally Funded Technical Institution (CFTI). Its scope has been extended to private institutions as well.
  - Projects with industry support will be preferred

## 6.10. START UP INDIA'S ACADEMIA ALLIANCE PROGRAM

**Why in news?**

Recently, Start-up India launched Startup Academia Alliance Program.

**About Academia Alliance Program**

- It is a **unique mentorship opportunity** between academic scholars and start-ups to promote **the spirit of entrepreneurship** in the country.
- It aims to **reduce the gap** between **scientific research and its industrial application** in order to increase the efficacy of technology and widen its impact.
- It strives to implement the third pillar on which the Startup India Action Plan is based - Industry Academia Partnerships and Incubation. The other two being Simplification and Handholding & Funding Support and Incentives
- It has been partnered by Regional Centre for Biotechnology, The Energy and Resources Institute (TERI), Council on Energy, Environment and Water, and TERI School of Advanced Studies to provide mentorship and guidance to relevant start-ups in the field of renewable energy, biotechnology, healthcare etc.

## 6.11. REPURPOSE USED COOKING OIL (RUCO)

**Why in news?**

Recently, FSSAI launched Repurpose Used cooking Oil (RUCO) initiative.

**Background**

- Earlier, food safety regulator notified standards for used cooking oil.
- **National Policy on Biofuels 2018** has categorized biodiesel as First Generation (1G) bio-fuel and it also encourages setting up of supply chain mechanisms for biodiesel production from Used Cooking Oil.
- FSSAI is also looking at introducing regulations to ensure that companies that use large quantities of cooking oil maintain a stock register and hand it over to registered collecting agencies to convert it into biofuel.

**About UCO standards**

- According to FSSAI regulations, the maximum permissible limits for **Total Polar Compounds** (TPC) in cooking oil have been set at **25 per cent**.
- TPC is formed due to **repeated frying** and usage of edible oil which changes its physiochemical and nutrition properties making it unfit for human consumption.
- TPCs above the set level cause hypertension, atherosclerosis, Alzheimer's disease, liver disease etc.
- **FSSAI** is working in partnership with **Biodiesel Association of India** (BDAI) and the food industry to ensure effective compliance of UCO standards.
- FSSAI is also implementing a '**Triple E strategy**' - **Education, Enforcement and Ecosystem** to divert UCO from the food value chain and curb current illegal practices.

**Related information**

- Cooking oil may have saturated fatty acids (palm oil) or unsaturated fatty acids (soyabean).
- The saturated fatty acids such as in palm oil are more stable that the unsaturated fatty acids which decompose easily at high temperature forming **polar compounds**.
- Thus, it makes oils with saturated fatty acids fit for frying. However, oils with unsaturated fatty acids are healthier provided they are used just once for frying.

**About Repurpose Used Cooking Oil Initiative**

- It has been launched with an aim to enable collection and conversion of used cooking oil to bio-diesel.
- Under this around 64 companies at 101 locations have been identified to enable collection of used cooking oil.
- **Significance:**
  - India has the potential to recover 220 crore litres of used cooking oil for the production of biodiesel by 2022 if co-ordinated actions are taken.
  - It is environment friendly because as of now cooking oil is either not discarded or disposed in an environmentally hazardous manner, thereby, choking drains and sewerage systems.
  - It would promote public health as the initiative would prevent diversion of UCO to smaller restaurants, dhaabas and street-vendors.

## 6.12. THERMAL BATTERY

**Why in News?**

World's first-ever thermal battery plant was inaugurated in Andhra Pradesh.

**Thermal Battery**

- **Conventional battery technology** is based on the system of charging/discharging cycles that are driven by electricity.
- For example, the Lithium-ion battery, consists of electric charges being transferred from electrodes. Energy is derived from this battery, when lithium atoms turn into lithium ions (Li+), and get stored when this reaction reverses.
- **Thermal batteries**, on the other hand, use thermal energy to operate, i.e., the **energy created by temperature differences**.
- A thermal battery consists of **two parts: a cool zone known as sink, and a hot source called source.**
- Both these sides consist of compounds known as **phase-changing materials (PCMs)**, which can change their state of matter on the basis of a physical/chemical reaction.
- When the sink of a thermal battery receives heat, it transforms physically or chemically, thereby storing energy, while the source cools down.
- During operation, the sink is cooled down, so it releases the stored energy, while the source heats up. Depending on the nature of the battery, the system can derive heat from any source, which makes a thermal battery very versatile.

**Benefits of Thermal Battery**

- They can help maintaining a low carbon footprint and last longer than the lithium batteries. Lithium batteries currently in use have a heavy carbon footprint and are expensive.
- Its integration with power grids, can help meet industrial demand.
- This could help solve power issues in remote areas.
- It can offer support to public transport systems and telecom grids.
- Telecom infrastructure can also be enhanced, as thermal batteries can help maintain signal strength and network connectivity.
- E-vehicles can also get charging power from stations running on thermal batteries.

## 6.13. BACTERIA WOLBACHIA

**Why in news?**

Recently successful experiments were conducted in Australia, which demonstrated the positive correlation between presence of Wolbachia bacteria in mosquitoes and reduced spread of diseases such as Malaria and Dengue.

**More on news**

- Wolbachia is a tiny bacterium that is present in up to **60% of all species of insects, including several mosquito species.**

- But it is usually **not present in the Aedes aegypti mosquito**, the primary species responsible for transmitting dengue, chikungunya and Zika.
- Wolbachia is one of the world's most common parasitic microbes and possibly the most common reproductive parasite in the biosphere.
- When present in the mosquito, the viruses cannot replicate and hence small numbers of wolbachia-carrying mosquitoes are released in target areas.
- The World Mosquito Program introduces Wolbachia into Aedes aegypti mosquitoes. Once Wolbachia carrying mosquitoes are released, they breed with wild mosquitoes and over time, the majority of mosquitoes carry Wolbachia.
- This new method provide **bio-control approach** to handle these diseases.
- In 2017, there were 1.9 lakh dengue cases and 325 deaths in the country. Until July this year, there have been 15,000 cases and 38 deaths. This method may help reduce such incidences of these diseases.

## 6.14. NEW INFLUENZA RESEARCH PROGRAMME

**Why in news?**

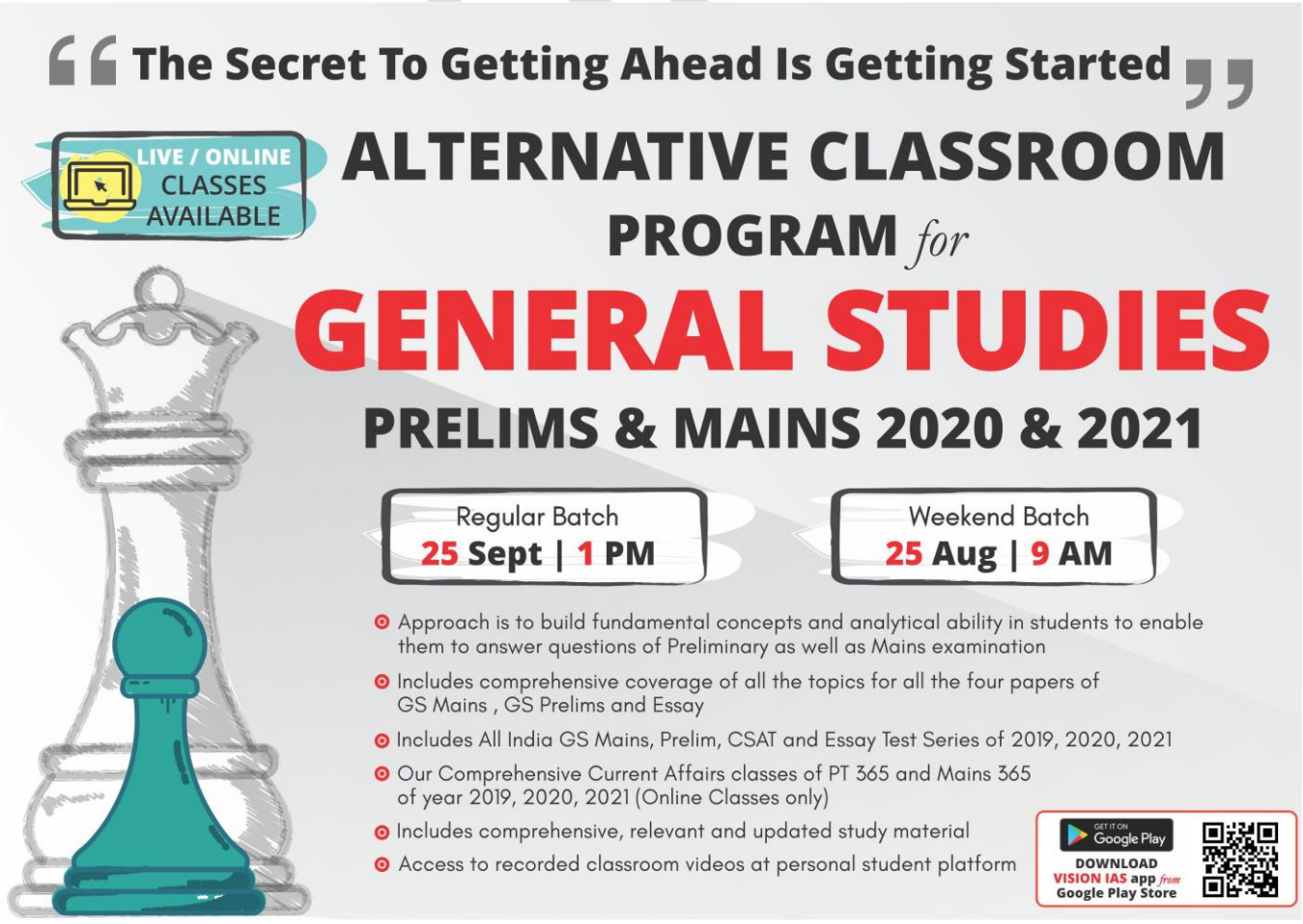
Recently, Indian and European Union (EU) collaborated for new influenza research programme to develop Next Generation Influenza Vaccine.

**About the programme**

- The programme will get fund of EUR 15 million under EU funding programme for research and innovation called **'Horizon 2020' (see box).**
- It aims at further advancing the next generation influenza vaccine with improved efficacy and safety, duration of immunity, and reactivity against an increased breadth of influenza strains.

**Horizon 2020**

- It is the biggest EU Research and Innovation programme with nearly €80 billion of funding available over 7 years (2014 to 2020).
- It is helping to achieve research and innovation on excellent science, industrial leadership and tackling societal challenges.

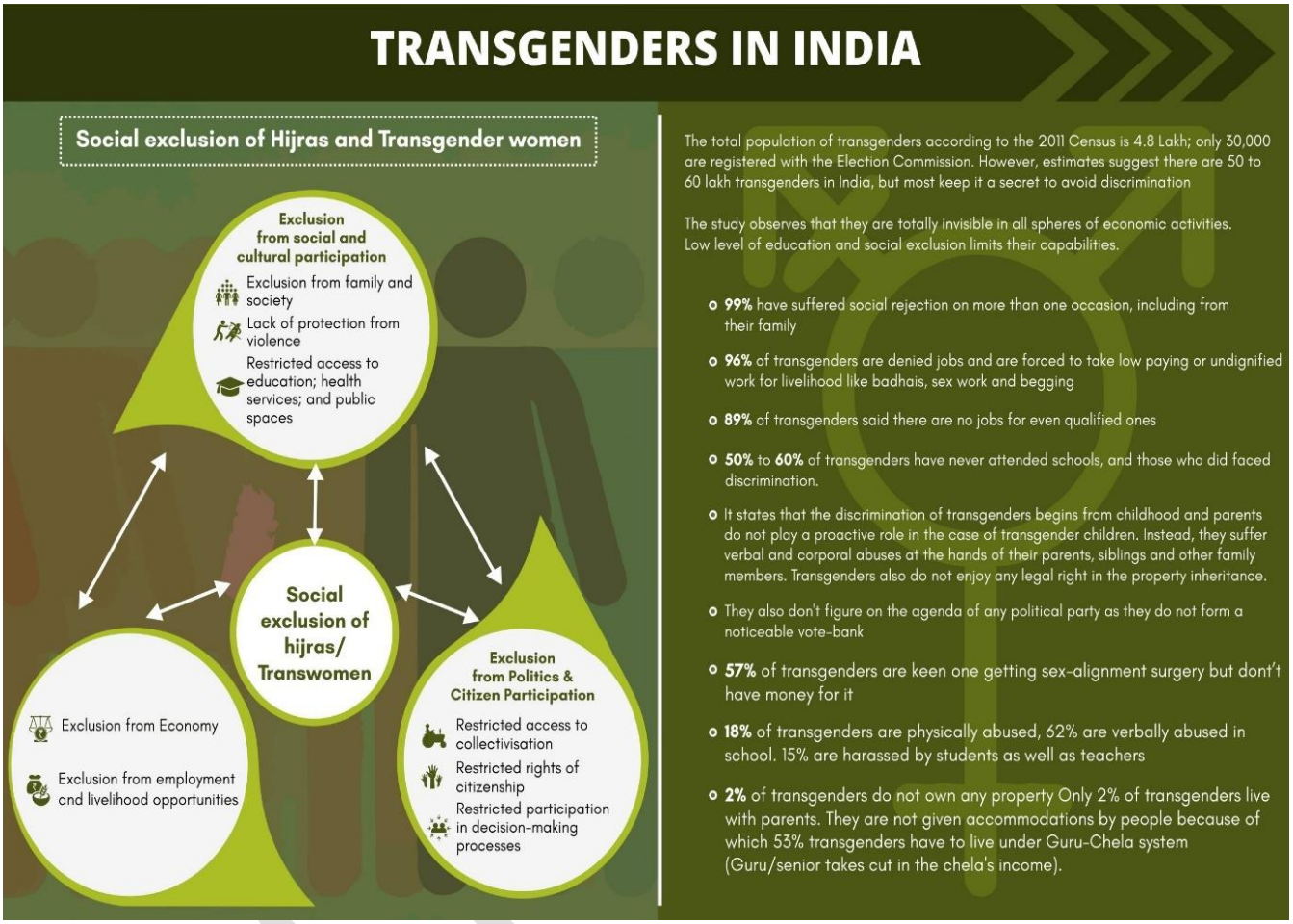


# 7. SOCIAL

## 7.1. STUDY ON TRANSGENDERS

**Why in news?**

National Human Rights Commission (NHRC) for the first time did a study on the conditions of transgenders in India.




**Efforts taken to improve the situation of transgenders in India**

- **National Legal Services Authority versus Union of India:** The Supreme Court of India legalized the presence of transgender people in 2014, and allowed the legal creation of a "third gender" category.
  - The judgement also called for affirmative action in education, primary health care, and that transgenders be identified as beneficiaries of social welfare schemes.
  - NHRC in its report has pointed that center and state government have failed to implement SC guidelines in NALSA judgement or bring laws to improve lives of the transgenders. There is also no clarity on OBC status of transgenders".
- **Transgender Persons (Protection of Rights) Bill, 2016:**
  - The Bill **defines a transgender person** as one who is partly female or male; or a combination of female and male; or neither female nor male. In addition, the person's gender must not match the gender assigned at birth, and includes trans-men, trans-women, persons with intersex variations and gender-queers.
  - It **prohibits discrimination** against a transgender person in areas such as education, employment, and healthcare. It directs the central and state governments to provide welfare schemes in these areas.
  - Offences like compelling a transgender person to beg, denial of access to a public place, physical and sexual abuse, etc. would attract up to two years' imprisonment and a fine.
  - It directs Central government to constitute a **National Council for Transgender** headed by the Union Minister of Social Justice and Empowerment.

- It provides **no child who is born a transgender can be separated from his parents** except on a court's order.
- Every transgender person shall have
  - ✓ a right to reside in the house-hold where parent or immediate family members reside;
  - ✓ b) a right not to be excluded from such house-hold or any part thereof;
  - ✓ a right to enjoy and use the facilities of such house-hold in a nondiscriminatory manner.
- The Government shall take the following measures in relation to the transgender persons, namely:
  - ✓ a separate **HIV surveillance Centres**;
  - ✓ to provide for **medical care facility including sex reassignment surgery** and hormonal therapy; pre and post sex reassignment surgery and hormonal therapy counselling;
  - ✓ bring out a Health Manual related to sex reassignment surgery in accordance with the World Professional Association for Transgender Health guidelines;
  - ✓ to facilitate access to the transgender persons in the hospitals and other healthcare institutions and centres;
  - ✓ provision for coverage of medical expenses by a **comprehensive insurance scheme for transgender persons.**
- **Issues with the bill:**
  - ✓ The Bill states that a person recognised as 'transgender' would have the right to 'self-perceived' gender identity. However, it does not provide for the enforcement of such a right. A District Screening Committee would issue a certificate of identity to recognise transgender persons.
  - ✓ The Supreme Court has held that the **right to self-identification of gender** is part of the right to dignity and autonomy under Article 21 of the Constitution.
  - ✓ The **definition of 'transgender persons'** in the Bill is at variance with the definitions recognised by international bodies and experts in India.
  - ✓ The Bill includes terms like 'trans-men', 'trans-women', persons with 'intersex variations' and 'gender-queers' in its definition of transgender persons. However, these terms have not been defined.
  - ✓ Certain criminal and personal laws that are currently in force only recognise the genders of 'man' and 'woman'. It is unclear how such laws would apply to transgender persons who may not identify with either of the two genders.
  - ✓ It **does not include the creation of institutions like the national and State commissions for transgenders**, as well as transgender rights courts which were part of the earlier draft bill.

**Successful Transgender persons in India**

- In 1998 Shabnam Mausi became first transgender to get elected to a public office.
- In 2014, Grace Banu was the first transgender student to secure admission in an engineering college.
- In 2015, India got its first transgender college principal when Manabi Bandhopadhyaya joined as the principle of Krishnagar Women's College in West Bengal.
- Revathi became the first transgender to write about transgender issues and gender politics in Tamil.
- Padmini Prakash is the first transgender television news anchor in the country.

- University Grants commission in 2014 issued a notification to facilitate the education of transgenders such as grievance cells in colleges, separate category in admission and examination forms etc.
- **Important steps taken by states:**
  - **Tamil Nadu** is frontrunning state in taking steps for development of transgenders by providing them education, identity cards and subsidized food and free housing. In a pioneering effort to address the issues faced by transgender people, the government of **Tamil Nadu** established **a transgender welfare board** in 2008 (West Bengal, Maharashtra, Chhattisgarh and Karnataka have also established the board).
    - ✓ Seats have been reserved in colleges and universities for the members of transgender community.
    - ✓ Tamil Nadu AIDS Initiative has formed a federation of 20,000 transgenders which provides various health services to its members.
  - **Kerala government** brought the **'State Policy for Transgenders in Kerala 2015'** to provide the "right to live with dignity."
    - ✓ Village and district panchayats and municipalities have been tasked with finding jobs, running special training and skills programmes and welfare projects.
    - ✓ A Transgender Justice Board has been established to address issues of discrimination and violence against them.
    - ✓ The Kochi Metro also provides jobs quota to Transgenders.

**Way forward**

- Government has taken certain measures to identify and enumerate transgender population. These measures need more streamlining and inter-ministerial cooperation is also required.
- While various state governments formulated schemes for transgender communities, a National policy is an urgent need to ensure greater involvement of transgender persons in policy formulation and program development.
- It is important to **sensitize parents of transgender children and other members of the society** with regards to the human rights of the transgender community.
- Transgender children are under severe stress and low self-esteem and **counselling services** need to be provided to them. A component of such services could be included under the Integrated Child Protection Schemes.
- **Legal and the law enforcement systems need to be empowered and sensitized** on the issues of Transgender community. Special Grievance Redressal Cells for their protection should be set up in all police stations.
- **Child Protection laws need to be strengthened** to address issues faced by transgender adolescents. The abandonment of child is a punishable offence under Section 317 of IPC. The age limit of child for this offence need to be increased to 18 years as abandonment of transgender children usually takes place between 12 and 18 years.
- **Care homes for transgender children** should be setup to prevent exploitation of vulnerable transgender children.
- **Legally transgender cannot enter into a marriage,** have spouse and setup their own family in India. They need to be provided right to marry and right to a family along with right of sexual orientation.
- Government should take steps to provide housing facilities to transgender people.
- **Transgender people should get equal employment opportunities** and every employer should be made to declare policy statement on trans recruitments.
- **Local governments need to play a positive and proactive role** in removal of taboos and discrimination.
- **All treatment and other facilities** should be provided at free of cost or at subsidized rates to all transgender patients in both government and private hospitals.
- School and colleges need to play a supportive and encouraging role in providing education and value-system to Transgender.
- Establishment of helpline for career planning and guidance, career opportunities and online placement system must be empowered.
- Liberal credit facilities and financial assistance must be ensured to start up their career as an entrepreneur or businessman.

**International Practices**

- Countries like Denmark, Malta and Argentina have made legislations related to self-determination. Following Argentina's lead India can choose to adopt the **Yogyakarta principles-** i.e. adopt a model of gender recognition that does not rely on a diagnosis by medical professionals.
- In United Kingdom change in legal sex does not have an effect on marriage, security benefits/pensions and do not adversely affect parenthood or succession rights.
- Following precedents set by Iran, Argentina and Brazil sexual reassignment surgery and hormone therapy should be defined as a public health right and be made freely available.

## 7.2. CARE ECONOMY

**Why in news?**

International Labour Organization (ILO) released report "**Care Work and Care Jobs for the Future of Decent Work**".

**What is care economy?**

- The care economy entails the production and consumption of goods and services necessary for the physical, social, mental and emotional well-being of care-dependent groups, such as children, the elderly, the ill and people with disabilities, as well as healthy, prime working-age adults. In 2015, 2.1 billion people children, older persons, people with several disabilities needed care and by 2030 this number will increase by 200 million people.
- Care work consists of two overlapping activities: *direct, personal and relational care activities*, such as feeding a baby or nursing an ill partner; and *indirect care activities*, such as cooking and cleaning.

- Unpaid care work is care work provided without a monetary reward by *unpaid carers*. *Paid care work* is performed for pay or profit by care workers such as nurses, teachers, doctors and personal care workers. Domestic workers, who provide both direct and indirect care in households, are also part of the care workforce.

**Care economy and Gender inequality**

- The majority of the care work worldwide is undertaken by unpaid carers, mostly women and girls from **socially disadvantaged groups.**
- Unpaid care activities constitute a time and energy-consuming occupation that limits women's access to the labour market, relegating them to **low-income** and **insecure employment**.
- Most paid care workers are women, frequently migrants and working in the informal economy under poor conditions and for low pay and it forms important source of employment for women.

**Care Economy in India**

- Women in India do almost 10 times as much unpaid work as men leaving them out of the formal workforce and unable to contribute to the economy.
- Due to the higher share of unpaid care work such as cooking, cleaning, and taking care of children and older members of the family, women's contribution is left out of GDP.
- Women are responsible for only 17% of India's GDP (In China-40%).

- Gender inequalities in unpaid care work are also linked to gender wage gaps. In countries where women shoulder most of the responsibility for unpaid care work, they are less likely to be engaged in paid employment, and those who are active in the labour market are more likely to be limited to part-time or informal employment, and earn less than their male peers.

**Why is care work central to overall human development?**

- **Reorganization of the care economy** to **correct the gender imbalances** in unpaid care work is an indispensable component of any policy intervention towards **gender equality**.
- Care economy is **a development policy issue** that also pertains **to poverty reduction, elimination of inequalities by socio-economic status, decent jobs creation and sustainable and inclusive growth.**
- **Children are the workforce of the future**, and investing in high quality and affordable childcare lays the foundation for our future.
- **Care policy coverage deficits impact the most disadvantaged groups** like people with care needs and care responsibilities (especially women), older persons, people living with disabilities, those living with HIV, indigenous peoples, those living in rural areas and those working in non-standard forms of employment or in the informal economy.
- The global prominence of **nuclear families and single-headed households**, higher care dependency ratios, changing care needs and the growth of women's employment in certain countries **increase the demand for care workers**.

**Way forward**

To avert a global care crisis and meet the Sustainable Development Goals **the policy recommendations and measures are needed to achieve the high road to care work in the form of 5R Framework for Decent Care Work**.

## 7.3. HARASSMENT OF WOMEN AT WORKPLACE

**Why in news?**

The Ministry of Corporate Affairs has amended the Companies (Accounts) Rules, 2014 and has made the disclosure of compliance (under the Sexual Harassment of Women at Workplace Act) mandatory in the Annual Reports of Private companies.

**Background**

- The Ministry of Women and Child Development (MWCD) has been making continuous efforts to mainstream the implementation of the Sexual Harassment of Women at Workplace Act, 2013.
- All ministries and departments under central government have to constitute Internal Complaints Committee. Complaints can be filed under the Act directly with the ministry through the SHE-Box.
- In context of this the MWCD had requested the Ministry of Corporate Affairs for making disclosure of compliance mandatory in annual reports of private companies.

**Rationale behind the amendment in rules**

- The inclusion of the compliance under the Sexual Harassment of Women at Workplace Act in the non-financial disclosures will ensure that the issue gets into the focus into Board of Directors of the private companies. This will cast higher responsibility on the Directors for implementation of the Act.

**Harassment of women at workplace**

- **Reason for harassment:** The basic reason for women harassment at workplace lies in patriarchal structure of the society leading to a sense of male superiority. Apart from jealousy at work, there is general feeling of contempt and disrespect against women which is visible through sexually perverted behaviours.

**The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013:**

- It seeks to protect women from sexual harassment at their place of work. The Act defines sexual harassment at the workplace and creates a mechanism for redressal of complaints.
- The definition of "aggrieved woman," who will get protection under the Act, is extremely wide to cover all women, irrespective of their age or employment status and whether in the organized or unorganized sectors, public or private, and covers clients, customers and domestic workers as well.
- The Act covers concepts of quid pro quo harassment and hostile work environment as forms of sexual harassment if they occur in connection with an act or behaviour of sexual harassment.
- An internal complaints committee (ICC) is mandatory in every private or public organisation that has 10 or more employees.
- The Internal Complaints Committee has been given powers of a civil court for summoning, discovery and production of documents etc.
- Each Internal Committee requires membership from an NGO or association committed to the cause of women.
- A 'Local Complaints Committee' is required to be constituted in every district. An additional 'Local Complaints Committee' shall also be constituted at the block level to address complaints in situations where the complainant does not have recourse to an Internal Complaints Committee or where the complaint is against the employer himself.
- It also provides safeguards against false or malicious charges.

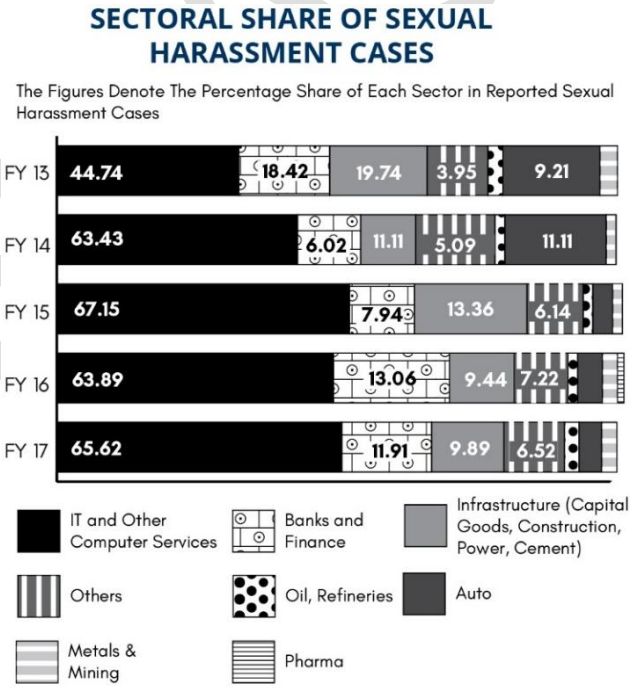
**Criticism of the Act**

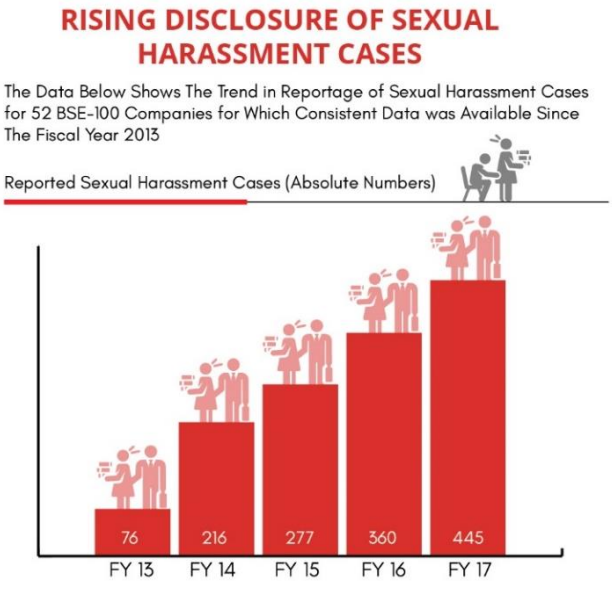
- The internal committee formed under this act has the power to decide a monetary fine which must be paid by the perpetrator, depending on their income and financial stability. This is a kind of **discriminatory method, it supports and envisages inequality among different sections of the society**, for example, a person earning low income would be paying a lower fine compared to a senior who earns more.
- The Act does not cover the agricultural workers and armed forces.
- The Act does not satisfactorily address accountability. It does not specify who is in charge of ensuring that workplaces comply with the Act.
- It is not a gender-neutral legislation and protects only women from sexual harassment at workplace.

- Between 2014 and 2015 cases of **sexual harassment within office premises more than doubled** and there has also been a 51% rise in sexual harassment cases at other places related to work in 2015.
- In 2017, the National Commission for Women received an average of 1.7 complaints of sexual harassment at workplace per day.
- **60% of complaints received in 2017 were from five states**: Uttar Pradesh, Delhi, Maharashtra, Madhya Pradesh and Haryana.
- In 2015 a study by FICCI titled Fostering Safe Workplaces showed that **36% of Indian companies and 25% of multinational companies had not yet constituted their ICCs.** About 50% of the more than 120 companies that participated in the study admitted that their ICC members were not legally trained.
- The Act imposes a penalty of upto Rs 50,000 on employers who do not implement the Act in the workplace or even fail to constitute an ICC. But, the number of employers who do not fully comply with the law indicates that there is little monitoring of their redressal machinery.
- According to a survey conducted by the Indian Bar Association in 2017, **70% women did not report sexual harassment by superiors.**

**Reasons for failure to report safety concerns:**

- **Lack of understanding:** Most women perceive that the behavior is not serious enough for them to take the next step and complain as there is a lack of understanding of what harassment is, the laws covering women safety and what they entail.
- **Lack of faith:** Women lack faith in the complaints process as registering a complaint can be embarrassing and the complaint process seem difficult and useless.
- **Fear of retaliation:** The fear of retaliation by the harasser or organization also makes them silent about it.
- **Self-judgement:** Some women consider that they can take care of the situation themselves rather than going through the entire complaints redressal procedure.
- **Social stigma:** There is a stigma attached to sexual harassment in Indian society. Most of the time women are looked down upon if they report such a case, irrespective of who is at fault in that situation. Several incidences of shaming at social media of women who report sexual abuse have been observed.




**Measures which an organisation can take to enhance the safety of women at workplace**

- **Getting women to speak up:** The organisation should make the environment conducive enough for women to register complaints against any such act. The registration complaints in severe cases directed to the government should be fast-tracked.
- **Deploying technology:** Technology such as GPS, CCTV cameras, mobile apps etc should be leveraged to create secure workplace and transportation to the women employees.
- **Gender sensitisation training:** Corporates should conduct gender-sensitization trainings and awareness programs for both men and women across their operations.
- **Mandating appropriate work practices:** Organisations often give more importance towards productivity than safety which gives a wrong signal to employees. The top management level should try to make safety a priority.
- **Instituting safe working conditions:** With a growing economy, working multiple shifts and late hours at the

office are quite common. The rising crimes against women limits their capabilities. Therefore, an organization may permit women to look at options such as telecommuting, leaving the office on time and catching up on unfinished work at home. Female security guards can be posted at necessary points in offices and a basic pantry inside the office premises can be provided so that women employees need not venture out for dinner when working late.

- **Zero tolerance policy** should be adopted within code of conduct for employees to show companies' firmness against such sexual harassment.
- Successful "Campaigns like *#MeToo* and #TimesUp have helped more and more women to come up and speak of their experiences of abuse.

**Conclusion**

Women always have to trade-off between safety and financial security which partly explains India's low female workforce participation rate as the fear of harassment keeps many skilled women away from the workforce. This is hurting India's productivity and economic growth, as According to World Bank estimates, India's economic growth can rise by a full percentage point if it even manages to raise its female LFPR to the level of Bangladesh. An adequate monitoring and redressal of sexual harassment in companies can play an important role in creating an enabling environment for women.

## 7.4. SUICIDE IN INDIA

**Why in news?**

Suicides in India have increased by 23% from 2000 to 2015 according to data released by the National Health Profile, 2018.

**Key Insights**

- Health (mental and physical) concerns are the leading causes of suicides in India, accounting for over 20% of all suicides
- Housewives comprise the largest share of suicides (18%); while farmers comprise 11%. Some has linked this to **nature of the social transformation** in the nature of the family, which is occurring in India.
- Suicides among most demographics are declining over time and farmer suicides are declining the fastest
- Suicide 'contagion' can occur if suicides are overly dramatized and/or played up.
- Mental Healthcare Act 2017 has decriminalized suicide.

**Causes of suicides in India**

- **Farmers Suicides**
  - **The National Crime Records Bureau (NCRB**) report underlines that indebtedness is found to be the single largest underlying cause behind farmers' suicide.
  - Maharashtra which had the largest number of farmer suicides concluded that 93 percent of all these suicides are due to debt.
- **Student Suicides**
  - Parents' over expectations on their academic achievements and criticisms on their underperformance could be contributing factors
- **Suicide in armed forces**
  - Soldiers posted in far flung areas and on prolonged deployment undergo tremendous mental stress
  - This could be compounded by the lack of basic amenities, ineffectual leadership, and humiliation at the hands of their officers.
- **Indebtedness in Rural India**
  - The NSSO data indicates that in 2002 about 27 percent of rural Indian households were indebted and 18 percent of urban households. In 2013 the rural indebtedness in Indian households had gone up to 31 percent.
- **Family problems' and 'illness'** are the leading reported causes of suicides.
- **Substances abuse:** Many of the substance abusers attempt suicide while under the influence of alcohol
- Other reasons such as **poverty, unemployment, lover affairs and bankruptcy** are very insignificant reported causes of suicides.

**Challenges**

- **Role of Media in Spreading Suicide Contagion**
  - It has the tendency to glorify and sensationalize the deaths resulting in a highly charged emotional atmosphere that promotes further suicidal behaviour.
  - Behavioural and psychiatric problems make cluster members more susceptible to suicide. And a significant number of these appear to be associated with suicide stories in the mass media.

- **Impact of internet and other communication networks on suicide**
  - Excessive users of internet were found to have high scores on anxiety and depression
  - Games such as 'Blue Whale' which is encouraging people to kill themselves.

**Way forward**

- **Opening up of suicide prevention clinics** in all the Medical College Hospitals, District Head Quarters Hospitals etc. will help to prevent repeat attempts
- Revamping the educational system with an objective to promote holistic development of the child, rather than the undue emphasis on scoring of marks in various subjects
- Restricting the access to means of suicide including measures for control of availability of pesticides, medications, etc.
- Largest share of suicides in India is committed by **housewives** whose concerns can also be addressed through **improved access to mental and physical healthcare.**
- It is imperative for policy makers in India to take note and design interventions that can address distress amongst various population groups and not aggravate by misjudging and focusing on indebtedness alone.
- **Easy access to credit and better MSPs** can help reducing farmer suicides
- **Media should avoid glamorizing the victim**, for example highly publicized politician visits and offering special packages might aggravate suicide contagion.
  - It should avoid excessive detailing of the suicide method
  - It is imperative that the media has a **code of ethics and guidelines for reporting suicides.**

## 7.5. THE RTE AMENDMENT BILL, 2017

**Why in News?**

Recently, in the monsoon session Lok Sabha passed the amendment to **The Right of Children to Free and Compulsory Education (second amendment) Bill, 2017** to abolish the 'No- Detention' policy in schools.

**Background**

- The **86th Constitution Amendment Act, 2002** requires the State to provide free and compulsory elementary education to all children. **The Right of Children to Free and Compulsory Education (RTE) Act, 2009** seeks to give effect to this Amendment under which all children between the ages of 6 and 14 years have the right to elementary education (class 1-8) in a neighbourhood school.
- The **Section 30 (1) of the RTE Act** states that a child cannot be detained in any class till the completion of elementary education.
- In recent years, two expert committees-**Geeta Bhukkal (2014)** and **TSR Subramanian (2016)**- reviewed the no-detention provision in the RTE Act and recommended it be removed or be discontinued in a phased manner.
- As per the amendment bill, regular examination will be held in Classes 5 and 8 and if a child fails there is a provision to give her additional opportunity to take a re-examination within two months. If she fails again in the re-examination, the relevant Central or State Government may decide to allow schools to detain the child.

**Arguments against No Detention Policy**

- **No incentives for children to learn and for the teachers to teach:** there is no provision under RTE Act to ensure objective measurement of learning outcomes through criteria such as attendance, test scores or examinations at the end of every class and thus automatic promotion reduces incentives for both children and teachers.
- **Children become non-serious, inattentive to studies and irregular in attendance:** for many students the Mid Day Meal is the only incentive, thus though No detention policy resulted in significant increase in enrollment, there has been little or no improvement in academic standards or quality of education.
- **Students lack required educational competence, knowledge and skills relevant to higher classes:** thus their poor performance further enhances in every subsequent class. Moreover, promoting laggards drags down the standard of the whole class and handicaps the teacher's ability to teach the curriculum at the expected pace which is unfair to the majority of the students in the class.
- **Increases the pressure and tension on the child:** Failing to ensure that child learns fundamentals of language (mother tongue) and basic arithmetic in primary classes increases the pressure and tension on the child and she may start drifting away from regular schooling system.

- **Reduction of dropout rate is an artificial construct and illusion created by No detention policy:** Automatic promotion of children only rolls over and postpones the problem of dropouts as seen from shoot up of dropouts in class 8 at the end of elementary stage.
- **Number of students failing in class 9 examinations has been on increase in many states:** In Delhi, for instance, the number of repeating students as a percentage of total students enrolled in Class 9 rose from 2.8% in 2010 to 13.4% in 2014, thus resulting in many states demanding a review of no detention policy.

**Arguments for the No Detention Policy**

- **Detaining children at the elementary level damages their self-esteem and give them a permanent inferiority complex:** The social stigma associated with "failing", has deeply damaging effects on the psyche of the child.
- **Detention leads to increased dropouts and rise in number of social problems:** Fear of failing in examinations and being detained has a detrimental effect on curricular learning for children. Detention leads to children dropping out of school and taking to vagrancy, begging and petty crime. On the other hand, keeping children in school prevents a host of social problems, including juvenile delinquency and child marriage.
- **Detention makes a child repeat entire syllabus of the class:** However, instead of detaining and repeating the same whole material again for another nine months, weaker areas of the child can be selectively targeted to cover the gaps in two or three months.
- **Learning as a continuous process:** Learning takes place in a continuum and any pass or fail categorization at a particular point of time is a narrow simplification and educationally invalid.
- **Issues with poor and vulnerable children:** In rural areas and among below poverty line families, educational awareness is missing which often result in late admissions in the schools. In other cases, children miss school for long periods due to poverty, illness, engagement in child labour and thus lag behind in their studies, performing badly in the examination. Detention will only aggravate these weaknesses and encourage them to drop out and remain unschooled forever.
- **Steady rise in the GER at the elementary level for the marginalized sections of the society:** for both boys and girls, as well as for Scheduled Castes, Tribes and other marginalised sections since the coming into effect of the no-detention policy. In a deeply fragmented society such as India, this is a significant gain which should not be reversed.

**Way Forward**

- Education should be inclusive and should have a common curriculum, so that all children become familiar with the basic concepts, tenets, principles and ethos of an Indian education.
- Detention should be resorted to only after giving the child remedial coaching and at least two extra chances to prove his capability.
- As recommended by TSR Subramanian committee if a child again fails to clear the examination, she should also be given other opportunities of pursuing her education through a vocational stream so that she can demonstrate her abilities and competencies elsewhere.
- Advances in technology must provide an additional 'augmentation' avenue to help the slow-learner child makeup for the lost ground.
- Simultaneously other significant areas such as teacher training, quality and accountability mechanisms must be improved in a holistic manner.

## 7.6. NEW INITIATIVES UNDER SWACHH BHARAT MISSION (U)

**Why in news?**

Ministery of Housing & Urban Affairs recently launched Swachh Survekshan 2019, SBM ODF+ and SBM ODF++ Protocols and web-based citizen engagement platform Swachh Manch.

**Swachh Survekshan 2019**

- This fourth edition Swachh Survekshan 2019 aims to increase the coverage of the ranking exercise to all cities under Swachh Bharat Mission-Urban. (Swachh Survekshan 2018 ranked 4,203 Cities.)
- The distinctive features of the survey includes encouraging large scale citizen participation, ensuring sustainability of initiatives taken towards garbage free and open defecation free cities, providing credible outcomes which would be validated by third party certification etc.

- Data will be collected from 4 broad sources – 'Service Level Progress', Direct Observation, Citizens Feedback and Certification(newly introduced). Certification will done on two different components-
    - **Star Rating of Garbage Free Cities** (20% weightage of marks)- It includes components such as cleanliness of drains & water bodies, plastic waste management, managing construction & demolition waste, etc. which are critical drivers for achieving garbage free cities.
    - **Open Defecation Free Protocols** (5% weightage)

**Including Public Urination in New Protocol**

- This is the first time that the Swachh Bharat Mission (Urban) is officially including the elimination of public urination in its agenda.
- The Mission is focussed on infrastructure and regulatory changes, on the assumption that this will lead to behaviour change. It is believed that in the case of urban areas, the problem is not one of usage, but of availability.
- In cities, if toilets are available, accessible and clean, people will automatically use them rather than using the road. However, some have criticised this pointing out that public urination, especially by men, is almost entirely a behaviour change issue and it is currently impractical to include urination.

**SBM ODF+ and ODF++ Protocol**

- The original ODF protocol, issued in March 2016, said, "A city/ward is notified as ODF city/ward if, at any point of the day, not a single person is found defecating in the open. With 18 states / UTs and 3,223 cities declared ODF. The ODF+ and ODF++ protocols are the next step for the SBM-U and aim to ensure sustainability in sanitation outcomes.
- The ODF+ protocol says that a city, ward or work circle could be declared ODF+ if, "at any point of the day, not a single person is found defecating and/or **urinating in the open**, and all community and public toilets are functional and well-maintained."
- The ODF++ protocol adds the condition that "**faecal sludge/septage and sewage is safely managed and treated**, with no discharging and/or dumping of untreated faecal sludge/septage and sewage in drains, water bodies or open areas."
- Thus, the SBM ODF+ protocol focuses on sustaining community/ public toilet usage by ensuring their functionality, cleanliness and maintenance while SBM ODF++ will focus on achieving sanitation sustainability by addressing complete sanitation value chain, including safe containment, processing and disposal of faecal sludge and septage.

**Swachh Manch web portal**

- It is a web-based platform which aims to bring together every stakeholder contributing to the Swachh Bharat Mission under a common platform. It will allow stakeholders to create/invite/participate in volunteering opportunities around neighborhoods.
- It will enable uploads of pictorial evidence of citizens and organizations participating in the initiatives, as well as record the number of hours volunteered, as acknowledgement of citizens'/organisations' efforts and contributions to the cause of 'swachhata'.
- The Swachh Manch will also be integrated with the existing Swachhata App to act as a citizens' grievance redressal platform.

## 7.7. PRADHAN MANTRI JAN AROGYA YOJANA

**Why in news?**

PMJAY has become the first healthcare scheme with Privacy policy.

**Background**

- This scheme was earlier announced in 2018 budget speech as PM Jan Arogya Abhiyan within the umbrella scheme of Ayushman Bharat (National Health Protection Mission).
- A miniature version of this scheme is already going on in Telangana from years. The entire IT platform used for this scheme will be outsourced from there.

**PMJAY and Data Protection**

- Since the scheme is based on Aadhar, several recommendations of Srikrishna Committee has been incorporated and Right to Privacy has been kept intact.
- The scheme will have its own Data Privacy Policy (Psudonymisation, anonymistaion and data minimisation, etc. will be done along with encryption, firewalls, etc. at various level).

- Digital health data will not be disclosed for commercial purposes, or to insurers, employers, or pharma companies.
- People will have right to request access to copies of their personal data, information on the processing activities carried out with it, request restriction of access or even withdraw consent.

**Challenges**

- Smooth coordination **between Centre and State** will be required.
- Smooth coordination **between ministries and various schemes** will also be required e.g. National Skill Development Corporation and National Health Agency has recently signed an MoU for skill development of Arogyamitras under PMJAY.
- States will have to develop a robust IT System. Only Six States have the administrative and technological capacity to implement this scheme now.
- Data Privacy is an emerging concept, and therefore the system will have to evolve in accordance with the development in technology and use/disclosure of data to private sector will require strict regulation.
- The system is based on Artificial Intelligence. Therefore, an ethical algorithm will be required so that the system does not discriminate on the basis of religion, caste, class, sex, etc.

For details about Ayushman Bharat and NHA, kindly refer to **February, 2018 current affairs** magazine of Vision IAS.

**More about the PMJAY**

- **National Health Agency** will be its implementing authority.
- There will be a provision of **Rs 5 lakh per annum** as health assurance (no premium to be paid by beneficiary) **for each family** and free of cost treatment for serious diseases.
- The cashless benefits can be availed from any **public or private empaneled hospital** across India. However, the payment will be done on Package rate basis **(involving secondary and tertiary care**) defined by Government.
- This will be the **world's largest government-sponsored healthcare scheme** (10 Crore family or 50 Crore people) covering a population the size of the US, Canada and Mexico.
- People in **SECC will get automatically enrolled** in this scheme.
- States are free to choose the mode of implementation, which could either be insurance-based, trust-route or mixed model.
- **Benefits of the scheme:** It will provide good quality, affordable healthcare to all, new infrastructure in tier II and III cities will reduce regional disparity, role of middle men and money lender will decrease and employment opportunities will be created in health and IT sector. It will be a Rights based approach and will help migrant communities as well.

**Related Information - Aarogyamitras:**

- Literally the word means **Friends of Health**.
- They will **act as interface** between the beneficiaries of this scheme and the system.
- **NSDC** will skill them in terms of behavior, knowledge and presentation.
- NSDC will use its network of PM Kaushal Kendra (PMKK) under PM Kaushal Vikas Yojana (PMKVY).
- They will also be **certified by Health Care Sector Skill Council** (non-statutory body for health sector under NSDC).

## 7.8. SCHEME FOR PHARMACOVIGILANCE OF AYUSH DRUGS

**Why in news?**

Ministry of AYUSH has introduced new Central Sector scheme for promoting pharmacovigilance of AYUSH Drugs.

**About the scheme**

- **Objective**: To develop the **culture of documenting adverse effects** & undertake safety monitoring of AYUSH drugs.
- It will undertake **surveillance of misleading advertisements** appearing in the print and electronic media.

**About pharmacovigilance**

- It is defined as the science and activities relating to the detection, assessment, understanding and prevention of adverse effects or any other drug-related problem.

**Need for Pharmacovigilance**

- **Quality issues and safety concerns** of Ayurveda, Siddha, Unani and Homoeopathy Drugs raised from various sources.
- For **Public Health,** it is necessary to oversee the impact of ASU&H Drugs and detect potentially unsafe drugs.
- Requirement of **regulating the publicizing of improper drug information** in the form advertisements.
- To ensure **usage with prescription** and under supervision of a qualified medical practitioner.
- To prevent consumption of these drugs as over the counter drug
- To conduct premarketing safety evaluation as well as post marketing surveillance.

- It intends to facilitate the establishment **of three-tier network** of National Pharmacovigilance Centre (NPvCC), Intermediary Pharmacovigilance Centres (IPvCCs) and Peripheral Pharmacovigilance Centres (PPvCC) to take up the work of reporting, documentation, analysis, causality assessment of the adverse reactions and events associated with the consumption of AYUSH drugs.
- **All India Institute of Ayurveda**, an autonomous body under the Ministry of AYUSH, has been designated as National Pharmacovigilance Centre for coordinating various activities of the initiative.
- The scheme also aims to achieve the target of 100 peripheral pharmacovigilance centres by 2020.
- Representatives of **Central Drug Standards Control Organisation** as the national drug regulatory authority and the **Indian Pharmacopoeia Commission** being the WHO Collaborating Centre for Pharmacovigilance in the country are associated in the initiative as mentor and guide.

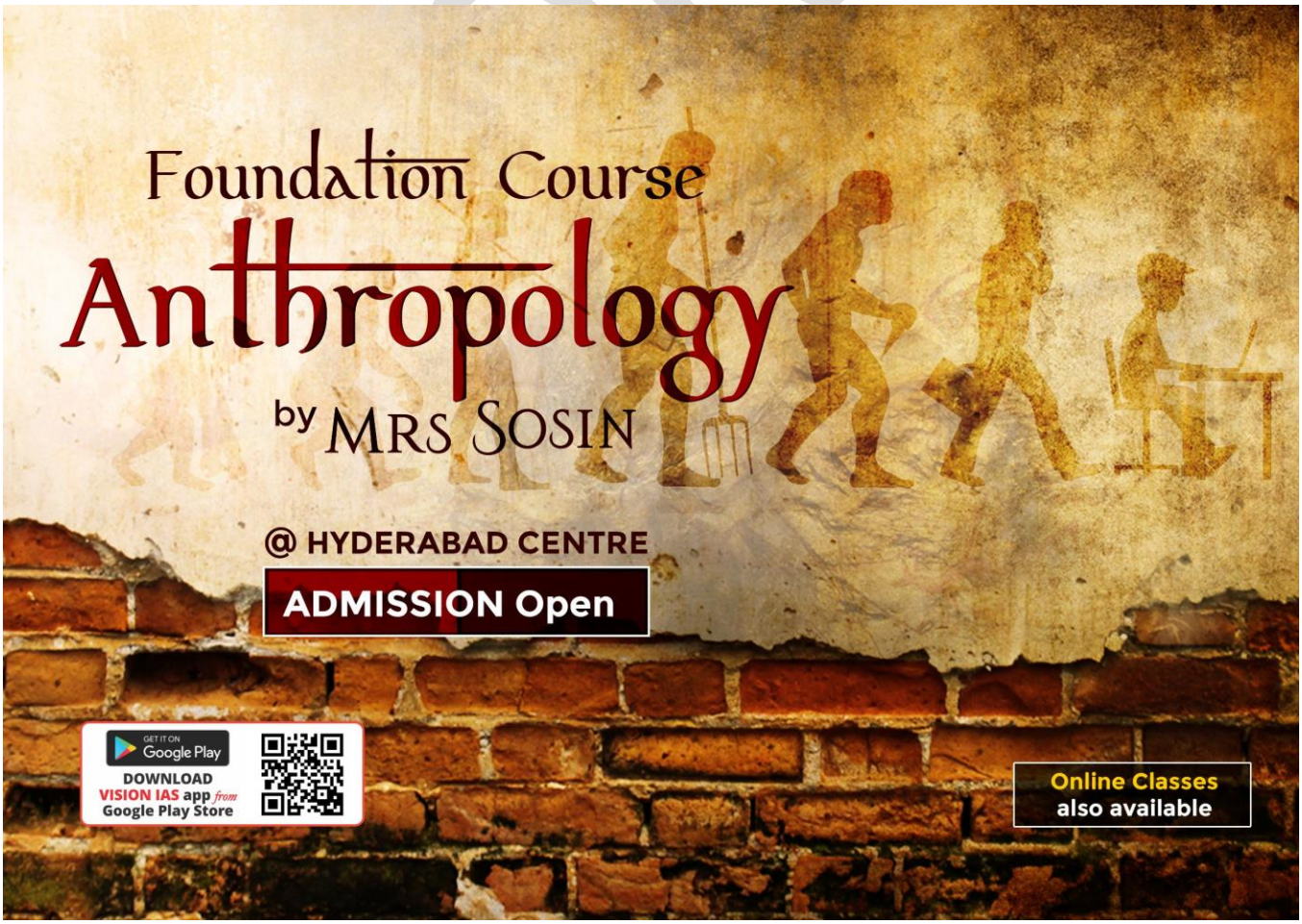
**About Central Drug Standards Control Organisation**

- It is the national drug regulatory authority.
- It is responsible for approval of New Drugs, Clinical Trials in the country and laying down the standards for Drugs.
- It exercises control over the quality of imported Drugs and coordination of the activities of State Drug Control Organisations.
- It provides expert advice with a view of bring about the uniformity in the enforcement of the Drugs and Cosmetics Act.

**About Indian Pharmacopoeia Commission**

- It is an Autonomous Institution under the Ministry of Health & Family Welfare.
- It is dedicated for setting of standards for drugs, pharmaceuticals and healthcare devices/ technologies etc.
- It also provides Reference Substances and Training.

While CDSCO has sole responsibility for Periodic Safety Update Reports, Indian Pharmacopoeia Commission (IPC) is in charge of co-ordinating Adverse Drug Reports (ADRs)



# 8. CULTURE

## 8.1. SWAMI VIVEKANANDA

**Why in news?**

This year marks the **125th anniversary** of Swami Vivekananda's **address at Parliament of the World's Religions** in 1893 held in Chicago.

**About Swami Vivekananda**

- He was one of the prominent Hindu leaders who carried the Indian philosophies to the West including Vedanta and Yoga.
- His teachings and philosophy stressed on **different aspects of religion, youth, education, faith, character building as well as social issues pertaining to India.**
- He was a major force in the **revival of Hinduism** in India, and contributed to the concept of nationalism in colonial India.
- He was a **disciple of Ramakrishna**, from whom he **learned of the Divine and spiritual part of oneself** as well as the importance of kindness and service to mankind.
- Some of great literary works of Swami Vivekananda are Raja Yoga, Karma Yoga, Bhakti Yoga, Jnana Yoga, My Master, Lectures from Colombo to Almora.

**Ramakrishna Mission**

- The Mission, founded by Vivekananda in 1897 is **a humanitarian organization which carries out medical, relief and educational programs.**
- Two main purposes of mission are to spread the teachings of Vedanta as embodied in the life of the Hindu saint Ramakrishna (1836–86) and to improve the social conditions of people.
- The ideals propagated by the mission include work as worship, the inherent divinity of every soul and the harmony of religions.

**Philosophy on Nationalism**

- Vivekananda played a major role in the growing Indian nationalism in the late 19th and the 20th century, encouraging many Indians with his success and appeal in the west.
- Swami Vivekananda's nationalism is deeply rooted in **Indian spirituality and morality**. He linked India's regeneration to her age-old tradition of spiritual goal.
- Unlike western nationalism which is secular in nature, Swami Vivekananda's nationalism was **based on religion** which is life blood of the Indian people.
- He galvanized the National Spirit by **exposing the British policy of profiteering** in complete disregard to the Indian interests and taught people to get rid first of self-inflicted bondages and resultant miseries.
- Like Vivekananda, **Aurbindo Ghosh and Mahatma Gandhi** also realized that religion and spirituality are in the veins of Indians and worked for India's unification through awakening the force of religion and spirituality.

**Advaita Vedantism**

- Advaita Vedanta is a non-dualistic school of Hinduism with its roots in the Vedas and Upanishads which recognizes one reality and one God.
- Swami Vivekananda was a great lover of Vedantic philosophy and he spread Advaita Vedanta to the west via the Ramakrishna Mission.
- He presented karma, bhakti, jnana and raja yoga as equal means to attain moksha, to present Vedanta as a liberal and universal religion, in contrast to the exclusivism of other religions.

**Philosophy on Religion**

- His philosophy was **assimilation of ideals prescribed in all religions** and he believed that all the religions of the world have the same value and importance.
- He told that though the paths are different for different religions but the goal is same.
- He attached great importance to the unity of all religions and their fusion into **one universal religion.**
- Swami Vivekananda represented India and Hinduism at **the Parliament of the World's Religions (1893) in Chicago.**
- Swami Vivekananda said in his speech **'not only tolerate other religions, but positively embrace them, as truth is the basis of all religions.'**
- He spoke about **tolerance and universality of India's spiritual traditions.** He denounced narrow-mindedness and fanaticism.
- He promoted with equal zeal the idea of the **equality of all human beings.**

**Philosophy on Education**

- Swami Vivekananda laid the greatest emphasis on education for the regeneration of our motherland and a nation is advanced in proportion as education is spread among the masses.
- According to him "**education is the manifestation of perfection already in man and that what a man 'learns' is really what he 'discovers' by taking the cover off his own soul, which is a mine of infinite knowledge."**
- He advocated **a man-making character-building education**.
- He said that education must make the students self-reliant and help them face the challenges of life.
- He believed if young boys and girls are encouraged and are not unnecessarily criticized all the time, they are bound to improve in time.

**Relevance of Swami Vivekananda's philosophy**

- The message of Swami Vivekananda promoting spiritual integration of the nation and world on the basis of universal brotherhood and goodwill becomes all the more relevant in these times.
- It has the potential to avert wars ensuring peaceful co-existence of individuals and nations.
- Several Government schemes like 'Start Up India', 'Stand Up India', Atal Innovation Mission schemes as are based on his philosophy that the future of India lay in the hands of youth.
- The philosophy of 'Ek Bharat-Shrestha Bharat' is the essence of Swami Vivekananda's.

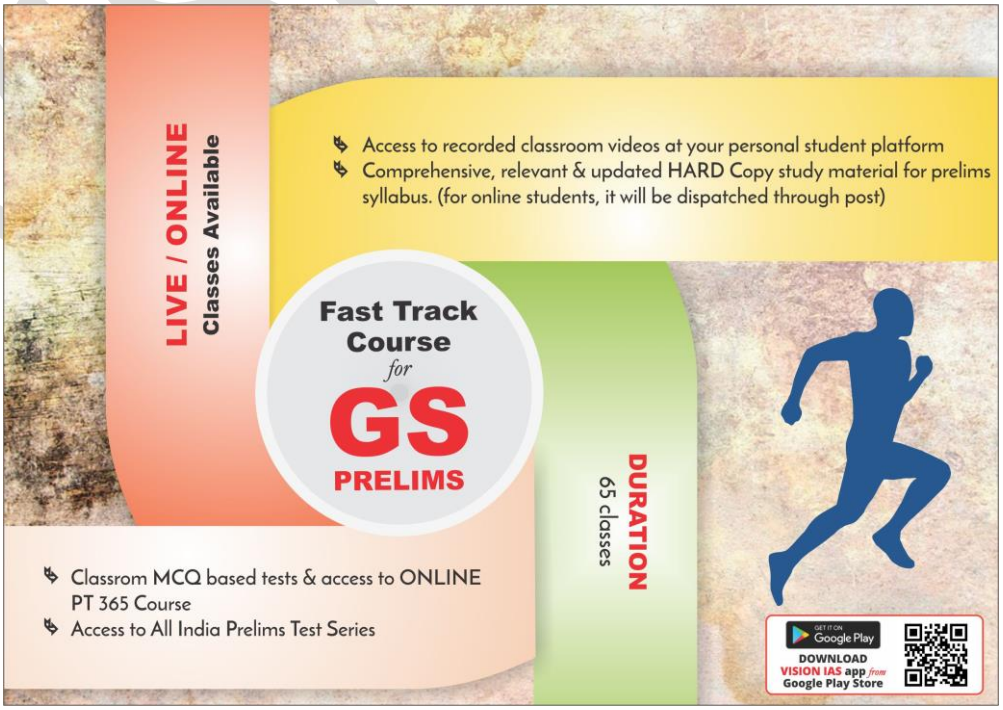
## 8.2. PINGALI VENKAYYA

**Why in news?**

Recently, 142$^{th}$ birth anniversary of Pingali Venkayya was observed.

**About Pingali Venkayya**

- He was a freedom fighter who was the brain behind designing of our National Flag – Tiranga.
- He also served in the British Army in South Africa during the Anglo Boer war in Africa and during this time he met Mahatma Gandhi.
- Between 1918 and 1921 Venkayya relentlessly campaigned for having our own national flag in every session of Congress. He even published a book in 1916 with over 30 designs.
- He was a nationalist, an ardent believer of Gandhian principles, linguist and a writer.
- After Venkyya returned from South Africa, he stated researching about farming and cultivation of cotton which earned him the nickname of Patti (cotton) Venkayya. He was also known as Japan Venkayya and Jhanda Venkayya.



# 9. ETHICS

## 9.1. ETHICS IN DISASTER MANAGEMENT

UN defines disaster as a serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources.

Disaster demands humanitarian aid to relieve the suffering of individuals. It also asks for Rehabilitation and Risk Reduction. In this process, disaster management brings out several moral and ethical concerns which need to be resolved.

| Key Stakeholders | Key Issues Involved | Professional Ethics Involved | Human Values Involved |
|---|---|---|---|
| **Governments of Country** (National, State, Local)<br>**Governments of other countries** and **International institutions** (whole world)<br>**Victims of Disaster**<br>**Civil Society and NGOs**<br>Individual **Citizens** of the country<br>**Media**<br>**Intelligentsia** such as scientific community, writers, etc.<br>**Corporate Sector** who can contribute in capacity building<br>**Industries and sectors** responsible in case of natural disasters<br>**Army/Relief workers** | Preventive ethics<br>Disaster triage (sorting people in groups according to their needs/medical help for allocation of limited resources)<br>Informed consent, Communicable disease surveillance, Risk communication, Refusal of medical treatment, Euthanasia<br>Linguistic, religious, and cultural differences<br>Vulnerable groups<br>Community participation, division of labour<br>Healthcare workers` duty to treat, obligations to disaster relief workers<br>Relations with industry and media<br>Disaster response, rehabilitation and disaster research. | **Accountability and Transparency** (in decision making)<br>**Professionalism** (while allocating resources)<br>**Confidentiality** (especially when public order and national interests are involved)<br>**Avoiding Conflict of Interest (**such as in fund and contract allocation for the relief work)<br>**Impartiality** (while dealing with people who belong to different nation, religion, region, race, caste, or sex etc.)<br>**Maintaining neutrality** (when Political opinion of the Government or the people differs)<br>**Distributive justice** | **Honesty** (being genuine in terms of providing information, allocating resources, relief measures, beneficiaries, etc.)<br>**Courage** (taking risks, being accountable, whistle-blowing, etc.)<br>**Fairness (**treating people in a just and equitable way)<br>**Respect** (towards Rights of people, their dignity and values, etc.)<br>**Empathy** (for the sufferings of people)<br>**Trust** (keeping the promises made) |

**Disaster Management Ethics include**

The Disaster ethics is a very broad field as it may range from individual to collective ethics and has to resolve both macro and micro perspective of the Disaster.

- **Pre-Disaster or Preventive phase:**
  - It is moral responsibility of a **government** to develop capabilities to prevent/reduce the risk of disaster and develop a robust early warning mechanism. The other countries must also identify their roles and should reach out for help e.g. in disasters related to climate change or war etc.
  - **Media** should play a constructive role in identifying and highlighting the issues, so that people should be aware and get ready for the scenario in advance.

- **Industries and corporates** should always opt for environmental impact assessment. Those involved in hazardous sectors should ensure safety of their workers as well as the surrounding population and ecosystem.
- **Scientific Communities** must strive to innovate according to the demands of people and environment. **Intelligentsia** have a duty to keep the governments accountable and remind them about pending calamity.

- **Disaster or Early Response phase:**
  - **National Governments:** When prevention and deterrence fail to avert complex emergencies, the only moral response is a **timely, rapid and effective intervention** with assistance effort. If the authorities and relief workers act slowly, they may be late in saving lives and thus violate the principle of doing no harm.
  - **International Community:** In the area of human rights, it is not sufficient to be a neutral intermediary. When governments blatantly violate human rights or need additional help, the **international community has a moral duty to intervene**.
  - **Victims:** The right of an individual to receive equitable disaster relief and recovery aid that is culturally and gender-appropriate should be an inalienable right and not subject to negotiation. If there is a duty to bring relief aid to disaster survivors, then that duty must include non-discrimination on the basis of race, religion, gender, class, and political affiliation.
    - ✓ **Respect of dignity:** No community is utterly helpless, even in times of war and famine. Repeated use of these images has dulled the public to real suffering, while encouraging the public to view people as unable to solve their own problems.
    - ✓ Women are usually at greater risk from physical and sexual abuse during disasters. Assistance policies, however, often do not prioritize women's welfare, largely because of a lack of gender awareness and commitment by agencies and relief officials.
  - **Rescue workers:** Threat to the lives of the relief workers also exist. This creates a dilemma of self-interest vs duty. A high level of devotion towards duty and a high emotional intelligence is required at that time.

**Ethical Dilemmas in Disaster Management:** Theoretically, there are three types of ethical dilemmas:

- The first involves **choices between options with conflicting merits and costs**. This type of dilemma can be addressed through professional training.
- The second form is centered on moral subjectivity reflecting such dilemmas as **how to act when values of intended beneficiaries clash with those of humanitarian institutions**. Such conflicts can be addressed through mechanisms of participation and empowerment.
- The third dilemma type is where **moral conflicts are perceived within a hierarchy of moral obligations**. Humanitarian agencies may highlight the sanctity of life as the ultimate value superseding military and political interests, which often serve as excuses for inaction.

**Role of Media in Disaster Management:**

- Media plays an important role in dissemination of information for both the general community and disaster victims. In addition, disasters covered by the media receive more attention.
- Information helps survivors make informed decisions that are intrinsically related to their life arrangements and future well-being. Therefore, in disaster situations, Media must try to minimize misinformation, and must regulate news which can create mistrust and refusal of public relief measures. False reports by media such as opening of dam, lake outburst etc. during disaster creates panic among public as well as state administration.
- Media interest in the disasters and people affected by disasters raises ethical issues on privacy and the principle of respect for autonomy. In the Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief (1995), it is stated that in the information, publicity and advertising activities, the disaster victims should be recognized as dignified humans, and not as hopeless objects.

- **Post-Disaster or Rehabilitation phase:**
  - According to the UNDP (1997), a disaster response should **prevent future disasters and decrease vulnerability** of the victims to avoid development of a dependency syndrome.
  - The only permanent and, therefore, ethically legitimate disaster relief strategy is one which helps victims to achieve their own long-term development. Therefore, the most ethical way to spend funds collected for Disaster response is through contracting services from the affected and neighboring communities only, so that their economy develops sooner.

**Conclusion**

Disasters vary considerably with respect to their time, place and extent; therefore, ethical questions in these situations may not always have one-size-fits-all answers. On the other hand, embedding ethical values and principles in every aspect is of vital importance in disasters. Measures should be taken both at the local level as well as the country level. In conclusion, it is not only by making great efforts before disasters but also should have a positive attitude is necessary during disasters that ethical challenges can be minimized in disaster responses.

## 9.2. ENVIRONMENTAL ETHICS

Environmental ethics concerns human beings' ethical relationship with the natural environment. It brings out the fact that all the life forms on Earth have the **Right to live**. By destroying nature, we are denying the life forms this right. This act is unjust and unethical. Respecting the existence of not just other humans but also the non-human entities, and recognizing their right to live is our primary duty. With environmental ethics, **morality** extends to the **non-human world**.

**Some Ethical Dilemmas involved**

- Human Development or Environment
- Development of Current generation or that of Future Generation
- Quicker and easier way of development or Sustainable development
- Human Rights or Non-human (animal, plants, rivers, air) Rights
- Self centricism or Utilitarian

**Issues in Environmental Ethics**

- **Consumption of Natural Resources:** Natural resources are limited and are crucial for survival of human beings. It concerns the rights of future generations to a clean and green environment.
- **Destruction of forests:**
  - When industrial processes lead to destruction of resources, is it not the industry's responsibility to restore the depleted resources?
  - Can a restored environment make up for the original one? Who is responsible for the biodiversity loss?
  - Do animals and plants in the forests have rights? What would happen if animals, plants, and other species are destroyed? Should it affect us?
  - Is it right for us to be responsible for the extinction of certain species only for the sake of our consumption and greed?
- **Harm to Animals:** The reduction in the populations of several other animal species continues as they serve food sources, animal testing etc.
  - How can we deny the animals their right to live? How are we right in depriving them of their habitat and food? Who gave us the right to harm them for our convenience?
- **Environmental Pollution:** Environmental problems have a strong distributional dimension. For example, the negative effects of climate change will fall disproportionately on the poor in current generations, and on future generations who are less responsible for greenhouse gas emissions as they accrue.
  - In spite of knowing that gasoline run vehicles lead to the destruction of natural resources, is it right for us to continue manufacturing and using them?
  - Are the guidelines which are drawn to protect the environment and nature any effective? What is causing their failure?

**Ethics behind Sustainable development:**

- **Intergenerational equality:** It states that it is our responsibility to handover a healthy, resourceful and safe environment to the future generations, by justified use of resources, reducing pollution, controlling population and maintaining an ecological balance
- **Intragenerational equality:** An equality within and between the nations by such type of technological development which will support economic growth of the poor countries so as to reduce the wealth gap between the nations. It will also provide equal opportunity to use natural resources for all.

**How to maintain Environmental Ethics:**

- Equitable utilization of natural resources.
- Equity among the people of rural and urban areas.
- Conservation of resources for future generations.
- Environmental rights of animals.
- Environmental education.
- Conservation of traditional value systems.
- Prevention of unnecessary harm to animals
- Prevention of eco-terrorism.
- Use of eco-friendly items.
- Keeping the environment neat and clean.
- Environment Impact Assessment
- Community participation in protecting environment.

**Ethical theories and Environment**

- **Religion:** Most religions encourage the ideas of protecting the environment or preserving nature. In some religions, certain plants or animals, rivers and

mountains etc. are worshiped considering them as sacred or symbols of a particular deity. This shows that disrespecting the rights of animals and other non-human entities is against religious morality.

- **Anthropocentric Ethic**: It is a part of utilitarian ethics. It claims that all the direct moral obligations we possess, including those we have with regard to the environment, are owed to our fellow human beings. The environmental concerns are only because of the way they affect human beings. For example, pollution diminishes health, resource depletion threatens standards of living, climate change puts human lives and livelihood at risk. Quite simply then, an anthropocentric ethic claims that we possess obligations to respect the environment for the sake of human well-being and prosperity.
  - The existing traditions of Environmental ethics are anthropocentric as it claims non-human 'nature/ecosystem' to have only "instrumental" value as a **means to human well-being**.
- **Deep Ecology:** According to this eco-philosphy, humans should broaden their idea of 'self' to include other life forms, it is about realizing **ecological consciousness**. It provides 8 basic Principles:
  - Intrinsic value of both human and non-human life on Earth.
  - Richness and diversity of life forms contribute to the realization of these values and are also values in themselves.
  - Humans have no right to reduce this richness and diversity except to satisfy vital needs.
  - The flourishing of all life and cultures is compatible with a substantially smaller population.
  - Present human interference with the non-human world is excessive, and the situation is rapidly worsening.
  - Policies must therefore be changed.
  - The ideological change will be mainly that of appreciating life quality rather than adhering to an increasingly higher standard of living.
  - Obligation directly or indirectly to try to implement the necessary changes.
- **Virtue Ethics:** It includes a certain range of excellences of character that are constitutive of a good human life: integrity, sensitivity, courage, loyalty, good judgment, and so on. They determine how we relate to the non-human world as well, for example, with sensitivity and compassion towards other sentient beings.

## 9.3. SPORTS ETHICS

Other than bringing entertainment to the audience, sports teaches tolerance, rule of law, trust, self-control etc. to the sportsperson themselves, as well as those who are watching it. Players become role models for younger generations and hugely impact the society. Therefore, it becomes important that their conduct remains ethical.

**Ethics in sports requires four key virtues: fairness, integrity, responsibility, and respect.**

**Fairness**

- Established rules should be followed by all.
- Uneven playing field violates the integrity of the game.
- There must not be any discrimination based on race, gender or sexual orientation.
- Referees must not show personal interest in the outcome.

**Respect**

- Athletes and Coaches should show respect for teammates, opponents, and officials.

**Other prominent values involved in Sports**

- Justice and Equity
- Commitment
- Solidarity
- Tolerance
- Trust
- Self-control and Discipline
- Initiative and Participation
- Cooperation
- Group Decision
- Democratic Spirit
- Pursuit for excellence

**Integrity**

Athletes must not gain an advantage over his or her opponent by means of a skill that the game itself was not designed to test e.g. faking an injury in football. It undermines personal integrity, may hurt the credibility of referees and ultimately the integrity of the game.

**Responsibility**

- Players and coaches should be responsible for their performances, actions on fields, and their emotions. They should also conduct themselves in an honourable way off the field as well.
- Responsibility requires that they should be aware of rules and regulations governing the sports.

**Ethical Issues in Sports**

1. **Fair Play**

   Equity and Impartiality are two important features of 'Fair play'. In sports, Fair Play means using only tactics that are in accordance with the spirit of the sport.

   Some players use dubious but legal tactics such as distracting an opponent, or misrepresenting their own skill level in order to make opponents over or underestimate them to gain an extra advantage in their sport e.g. in wrestling or boxing. This practice is known as gamesmanship. They are considered by most as Ethical.

   However, most sportsmen use some form of cheating in their games which on ethical terms violate the principle of Fair Play e.g. in Football to win a penalty, Diving (pretending to have been fouled) or Faking (exaggerating a mild injury) is done. Players caught faking can be suspended (Rivaldo in 2002 World cup). Similarly, Ball tampering (du Plessis in 2016) or Sledging in Cricket etc. are unethical practices.

2. **Level Playing Field**

   A 'level playing field' is a situation in which competitors are required to follow the same rules and are given an equal opportunity to compete. This means that **no matter what the rules are**, as long as they are applied equally and impartially, the playing field is still level. Issue of level playing field can be better understood by issue of using performance enhancing drugs. This brings out several ethical dimensions such as:

   - **Winning:** It's the taking part that counts, not the winning. Allowing drugs would focus more on winning, not taking part. Even for those who believe that winning is everything, it should not compromise ethical principles.
   - **Discrimination:** Poorer teams are already disadvantaged by other factors such as equipment, expertise and so on.
   - **Health Risks:** Many performance-enhancing drugs pose severe health risks. Even if athletes are willing and know the health risks, taking drugs amounts to harming oneself, or risking harm unnecessarily, and that is unethical.
   - **Spirit of Sports:** If the 'spirit of sport' includes the idea of hard work, taking drugs may be seen as a way of succeeding with less effort.
   - **Wrong precedence:** Amateur sports players would be encouraged to take drugs if professional athletes openly did it. As amateurs don't have medical support and advice, it could bring harm to them.
   - **Impact on others:** If drugs are allowed, drug advertising and sponsorship will presumably be allowed. This will influence the youngsters to use drugs.

   Therefore, performance enhancing drugs should be banned because not only do they violate spirit of competition, they can potentially damage the health of those taking them, whether they are elite athletes who stand the risk of being detected using them, or the recreational sportsperson who is unlikely ever to be tested. They should be banned also because anyone using them is trying to gain an unfair advantage over those athletes who wish to maintain normal health.

3. **Other prominent ethical issues include -** Match fixing and betting, exploitation by competitive parents and coaches, coaches having inappropriate relationships with players, salary being paid to sportspersons (whether being part of same team entitles them to equal pay), incentives given to sportspersons (govt. jobs being offered) etc.

**Role of Sports Regulatory Bodies:**

- To publish clear guidelines on what is considered to be ethical or unethical behaviour.
- To strictly implement the rules.
- Ensure participation and involvement of all, along with providing level playing field.
- To provide help and support to the media to promote good behaviour.

**Role of Government**

- Support those organizations and individuals who have demonstrated sound ethical principles in their work with sport.

- Encourage the education system to include the promotion of sport and fair play as a central part of the physical education curriculum.

**Conclusion**

Healthy competition is a means of cultivating personal honor, virtue and character. The goal in sportsmanship is not simply to win, but to pursue victory with honor by giving one's best effort. The founder of Olympic games, Pierre de Coubertin rightly says that, **'The most important thing in the Olympic Games is not winning but taking part; the essential thing in life is not conquering but fighting well.'**

# 10. MISCELLANEOUS

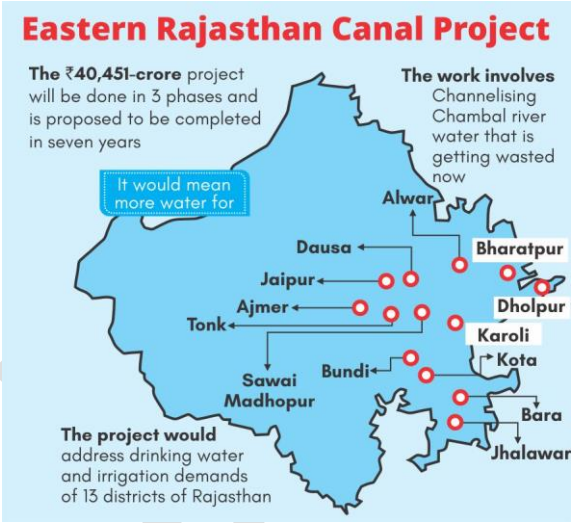
## 10.1. EASTERN RAJASTHAN CANAL PROJECT (ECRP)

**Why in news?**

The Ministry of water resources recently moved a proposal for cabinet approval of the Rs 400 billion Eastern Rajasthan Canal Project (ERCP).

**More about ECRP**

- The project's core aim is to move surplus water from rivers in South Rajasthan (such as the Chambal, Kalisindh, Gambhiri, Parbati), through a system of canals to areas in South Eastern Rajasthan which face large water deficits.
- This project is planned to meet the Drinking / Irrigation and Industrial water needs of the thirteen districts of Southern & South Eastern Rajasthan.
- It will irrigate nearly 10 Lakh acres of land. Additionally, it will help in recharging ground water and better management of floods and drought.
- Rajasthan government had been trying to get **national project status** (projects which are funded in the ratio of 90-10 between centre-state) for the project.




## 10.2. GLOBAL LIVEABILITY INDEX

**Why in news?**

Recently Economic Intelligence Unit, part of The Economist magazine of United Kingdom, released the Global Liveability Index 2018.

**About the Global Liveability Index**

- It is an annual index which has been running since about a decade.
- It ranks 140 global cities according to their living conditions and quantifies challenges that might be presented to an individual's lifestyle.
- It is based on 30 qualitative and quantitative indicators covering five broad categories– **stability (25%), healthcare (20%), culture and environment (25%), education (10%) and infrastructure (20%)** and uses **New York as a baseline** to measure each city
- While **Damascus** (Syria) is the least liveable city, **Vienna** has come at the top of the 2018 list
- Delhi and Mumbai are the only two cities to feature on the Global Liveability Index which and they have been ranked 112 and 117 respectively.

## 10.3. VIDYALAKSHMI PORTAL

**Why in news?**

As per National Securities Depository Limited (NSDL) report, 22119 applications are pending as on 29.07.2018 for more than 6 months on VidyaLakshmi Portal.

**About the portal**

- It is IT-based mechanism under the **Pradhan Mantri Vidya Lakshmi Karyakram** to provide students a single window electronic platform for Scholarships and Educational Loans
- It aims to enable all poor and middle class students to pursue higher education of their choice without any constraint of funds.
- It has been developed and being maintained by NSDL e-Governance Infrastructure Limited under the guidance of Department of Financial Services, Department of Higher Education and Indian Banks Association (IBA).

- Students can view, apply and track the education loan applications to banks anytime, anywhere by accessing the portal.
- The portal also provides **linkages to National Scholarship Portal**.

## 10.4. FIELDS MEDAL

**Why in news?**

Recently, **Indian- Australian mathematician Akshay Venkatesh** was awarded Fields Medal, also known as the Nobel prize for math.

**About Fields Award**

- It is awarded **every four years** on the occasion of International Congress of Mathematicians to recognise the outstanding mathematical achievements for existing work to the mathematicians **under the age of 40 years**.
- The prize was inaugurated in 1932. Each winner is awarded with a cash of 15000 Canadian dollars cash prize.
- During the award ceremony preferably two or four scholars are awarded.
- The medals and cash prizes are funded by a trust established by **John Charles Fields** at the University of Toronto, which has been supplemented periodically.
- Venkatesh was recognised for his use of dynamics theory, which studies the equations of moving objects to solve problems in number theory, which is the study of whole numbers, integers and prime numbers.

## 10.5. MOVE HACK

**Why in News?**

Recently, NITI Aayog has launched **Move Hack**, a global mobility hackathon **to crowd source solutions** aimed at the future of mobility in India.

**Deep learning technology** is a subset of machine learning (ML) in artificial intelligence (AI) that has networks capable of learning unsupervised from data that is unstructured or unlabelled.

**Details**

- Mobility Hackathon have two-pronged campaign approach:
  - **'Just Code It'** which is aimed at solutions through innovations in technology/product/software and data analysis.
  - **'Just Solve It'** which aims at innovative business ideas or sustainable solutions to transform mobility infrastructure through technology.
- It's organized in partnership with Government of Singapore and NVIDIA-will be the **deep learning technology** partner of Move-Hack.

## 10.6. TESLA'S BLACKHOLE

**Why in news?**

**Tesla's BlackHOLE machines** are to be used for **waste management** in **Ladakh**.

**More about the News**

- To tackle the garbage crisis in Ladakh, **Bengaluru-based Tesla Energy** (an arm of the US-based Tesla Green) has come up with a 'Blackhole' machine that works **without fuel or electricity**, and **converts all waste**, except glass & concrete material, **into ash**.
- Ladakh is suffering from a serious waste management crisis due to rising tourist footfall during peak season in June-August generating around 15-16 tonne of trash daily in a narrow arc covering the popular tourist haunts of **Nubra valley** in north-west Ladakh, **Pangong-Tso** and **Tso-Moriri lakes** in the east.
- Sending trash to the plains for disposal is economically and geographically unviable due to the rugged terrain and a short window when roads remain open hence BlackHOLE serve as solution to bridge that gap.
- The BlackHOLE machine is small and can be installed anywhere in the city for garbage disposal without segregating dry and wet waste.

- It reduces the volume of garbage in the ratio of 1/300 – 1/400 and the residue can be used as a by-product for **improving soil conditions** and can act as a **disinfectant**, alter mixing with water.
- The **BRO (Border Roads Organisation)** has already agreed to buy the ash for building roads on the mountainside.
- As compared to the incinerators, BlackHOLE requires no high temperatures and secondary combustion system as it is based on unique feature of **Plasmic Decomposition**

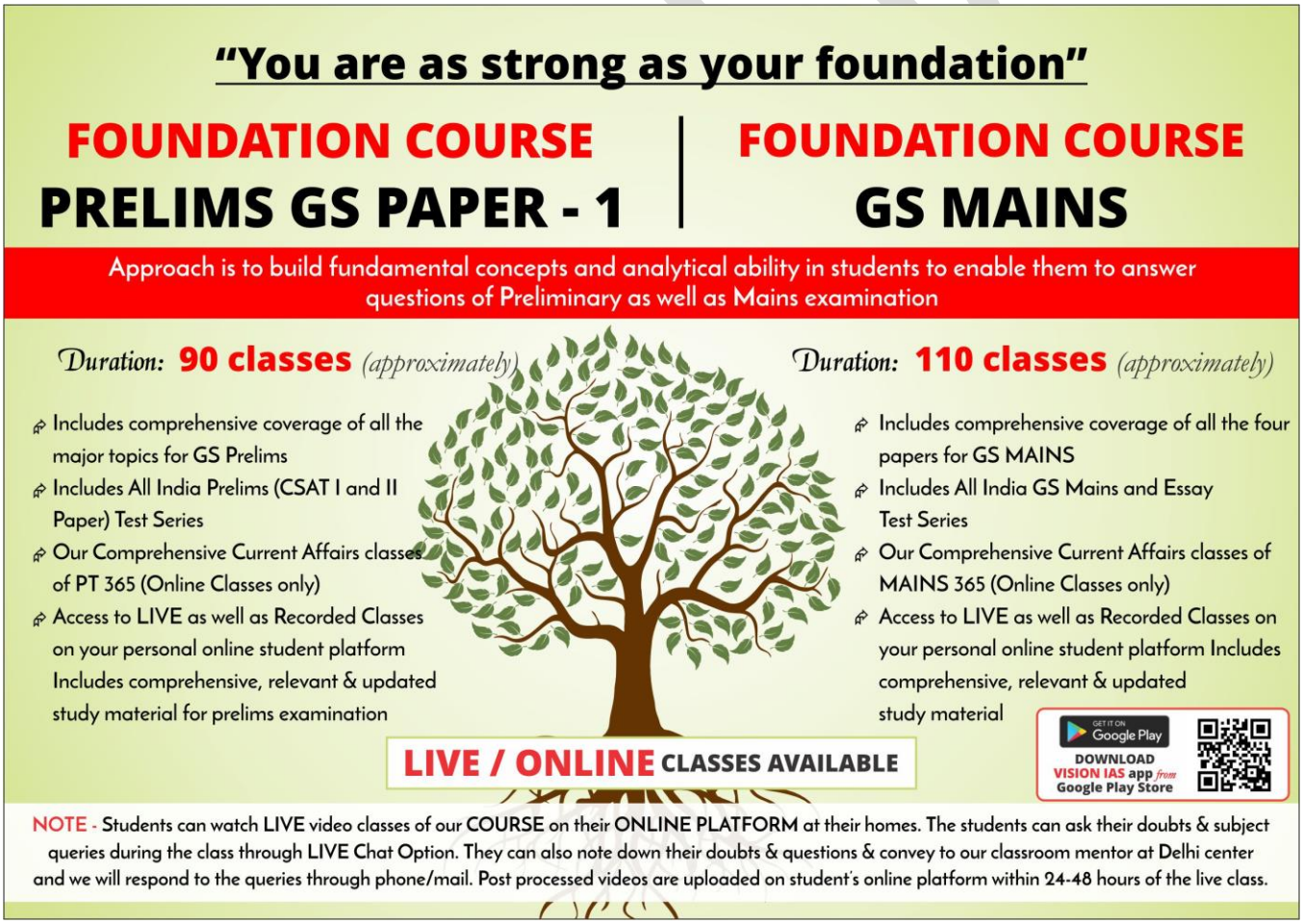
## 10.7. INDIAN HUMANOID RASHMI

**Why in news?**

Recently an Indian version of humanoid robot Sophia was made and is named as Rashmi.

**About the robot**

- Rashmi can **speak Hindi, Bhojpuri and Marathi along with English**.
- It is claimed to be as world's first Hindi speaking realistic humanoid robot and India's first lip-synching robot.
- **Rashmi uses linguistic interpretation (LI), artificial intelligence (AI), visual data and facial recognition systems.**
- It gives facial, eye, lips, and eyebrow expressions and it can move its neck.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